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TECH CENTER 1600/2900

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<150> 60/115,435

<151> 1999-01-06

<150> 60/118,848

<151> 1999-02-05

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<210> 45

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 45

atggcacagg acctgaac

18

<210> 46

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 46

tcaacgccac cggatctt

18

<210> 47

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 47

gtgagctccc tcgccgtc

18

<210> 48

<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 48
tcatcgtcgg gcactcgg 18

<210> 49
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<220>
<223> Description of Artificial Sequence: Primer

<400> 49
gtgccggttc cgctgtat 18

<210> 50
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 50
tcaccgggca ctgacctc 18

<210> 51
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 51
gtgaccgaga accttccg 18

<210> 52
<211> 18
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 52
tcagaccttc ttgaccac 18

<210> 53
<211> 18
<212> DNA
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<220>

<223> Description of Artificial Sequence: Primer

<400> 53

atggcctcag acgctttg

18

<210> 54
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 54

tcattgagac tcctcctc

18

<210> 55
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 55

atgatgaagt caagccgc

18

<210> 56
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 56

tcagtggctt acaaggag

18

<210> 57
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 57

atgactgacc tgccgttg 18

<210> 58
<211> 18
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 58
tcacaccagc agcgaggt 18

<210> 59
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<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 59
atggatttcc ccctcacc 18

<210> 60
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 60
tcatgcccct acctcggc 18

<210> 61
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 61
atgaccgcgc gcgtcgac 18

<210> 62
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 62
tcactcctcg gcttcggc 18

<210> 63
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 63
gtgtccaaga acgcggcg 18

<210> 64
<211> 18
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 64
tcatcggctc gcctcgtg 18

<210> 65
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<220>
<223> Description of Artificial Sequence: Primer

<400> 65
atgaccctca ccctgcgg 18

<210> 66
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 66
tcactcgggc actccttc 18

<210> 67
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 67
gtgaccgggtt ccgtaacg 18

<210> 68
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 68
tcatgagtcc gccgaggt 18

<210> 69
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 69
atgacagagg tccgaggt 18

<210> 70
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 70
cccggcaacc gccctccc 18

<210> 71
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 71
gtgatcgccg ccctcctg 18

<210> 72
<211> 18
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 72

ttacgggacg gcggtccg

18

<210> 73

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<220>

<221> modified_base

<222> (19)

<223> a, t, c or g

<220>

<221> modified_base

<222> (22)

<223> a, t, c or g

<400> 73

cggcatggtc ggctcchtnc ancaytg

27

<210> 74

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<220>

<221> modified_base

<222> (20)

<223> a, t, c or g

<220>

<221> modified_base

<222> (26)

<223> a, t, c or g

<400> 74

tgcagcagaa caggaggckn ycccankg

28

<210> 75

<211> 26

<212> DNA

<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

 <220>
 <221> modified_base
 <222> (18)
 <223> a, t, c or g

 <400> 75
 tgggtcagcg ggtaccanrc yttrwa 26

 <210> 76
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 76
 aaccatggc tgcttcctg acccgctgg cc 32

 <210> 77
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 77
 cctagatcta cgggcagggtg gggcggt 27

 <210> 78
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 78
 gggaattcca tatgatcctc acgtccttcc ac 32

 <210> 79
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 79
 ggcaagcttg ggtgagggtc cgttcggt 28

<210> 80
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Illustrative motif

<220>
 <221> MOD_RES
 <222> (4)
 <223> Variable amino acid

<400> 80
 Leu Gly Gly Xaa Ser
 1 5

<210> 81
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Illustrative motif

<220>
 <221> MOD_RES
 <222> (4)
 <223> Variable amino acid

<400> 81
 Leu Gly Gly Xaa Ser
 1 5

<210> 82
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 82
 ccgcccattgg gtgctccgcg tggcgagcgg acccggcgc

39

<210> 83
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 83

tgccccctcg ccctggcctc tagatcc

27

<210> 84

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 84

ggaattccat atgggcacca ccgtcgccgc g

31

<210> 85

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 85

cgcgaggtgc gggccagggt tcgaacgg

28

<210> 86

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: "THC" motif

<220>

<221> MOD_RES

<222> (2)

<223> Variable amino acid

<220>

<221> MOD_RES

<222> (5)

<223> Variable amino acid

<220>

<221> MOD_RES

<222> (7)..(8)

<223> Variable amino acid

<220>

<221> MOD_RES

<222> (11)

<223> Met or Leu

<220>
 <221> MOD_RES
 <222> (15)
 <223> Variable amino acid

<400> 86
 Pro Xaa Trp Pro Xaa Gly Xaa Xaa Gly Ser Xaa Thr His Cys Xaa Gly
 1 5 10 15

Tyr

<210> 87
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: (V/I)G(V/I)D motif

<220>
 <221> MOD_RES
 <222> (1)
 <223> Val or Ile

<220>
 <221> MOD_RES
 <222> (3)
 <223> Val or Ile

<400> 87
 Xaa Gly Xaa Asp
 1

<210> 88
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<220>
 <221> modified_base
 <222> (20)
 <223> A, C, T or G

<220>
 <221> modified_base
 <222> (26)
 <223> A, C, T or G

<400> 88
 tgcagcagaa caggaggckn ycccankg

<210> 89
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<220>
 <221> modified_base
 <222> (18)
 <223> A, T, C or G

<400> 89
 tgggtcagcg ggtaccanrc yttrwa

26

<210> 90
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<220>
 <221> modified_base
 <222> (19)
 <223> A, T, C or G

<220>
 <221> modified_base
 <222> (22)
 <223> A, T, C or G

<400> 90
 cggcatgggc ggctcchtna cncaytg

27

<210> 91
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Illustrative motif

<220>
 <221> MOD_RES
 <222> (1)
 <223> Phe or Trp

<220>
 <221> MOD_RES
 <222> (2)
 <223> Ser, Cys or Thr

<220>
 <221> MOD_RES
 <222> (3)
 <223> Variable amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Ala or Ser

<400> 91
 Xaa Xaa Xaa Lys Glu Xaa His His Lys
 1 5

<210> 92
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: NAD/FAD
 binding motif

<220>
 <221> MOD_RES
 <222> (2)
 <223> Variable amino acid

<220>
 <221> MOD_RES
 <222> (4)..(5)
 <223> Variable amino acid

<220>
 <221> MOD_RES
 <222> (7)..(9)
 <223> Variable amino acid

<220>
 <221> MOD_RES
 <222> (11)..(16)
 <223> Variable amino acid

<400> 92
 Gly Xaa Gly Xaa Xaa Gly Xaa Xaa Xaa Gly Xaa Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

Gly

<210> 93
 <211> 113
 <212> PRT
 <213> Streptomyces verticillus

<220>

<223> ORF30

<400> 93

Met Pro Val Pro Leu Tyr Gln Ala Lys Ala Glu Phe Phe Arg Met Leu
 1 5 10 15

Gly His Pro Val Arg Ile Arg Val Leu Glu Leu Leu Gln Asp Gly Pro
 20 25 30

Met Pro Val Arg Asp Leu Leu Ala Ala Ile Glu Ile Glu Pro Ser Ala
 35 40 45

Leu Ser Gln Gln Leu Ala Val Leu Arg Arg Ser Gly Ile Val Thr Ser
 50 55 60

Thr Arg Thr Gly Ser Thr Val Val Tyr Glu Leu Ala Gly Gly Asp Val
 65 70 75 80

Ala Glu Leu Met Ser Ala Ala Arg Arg Ile Leu Thr Glu Met Leu Asn
 85 90 95

Gly Gln His Glu Leu Leu Glu Glu Leu Arg Glu Ala Glu Val Ser Ala
 100 105 110

Arg

<210> 94

<211> 582

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF29

<400> 94

Met Ser Ser Leu Ala Val Arg Val Gly Ala Arg Val Arg Ser Val Leu
 1 5 10 15

Pro Thr Arg Ala Asp Leu Ala Gly Met Gly Arg Ser Pro Arg Arg Asp
 20 25 30

Leu Leu Ala Gly Leu Thr Val Ala Ile Val Ala Leu Pro Leu Ala Leu
 35 40 45

Gly Phe Gly Val Ser Ser Gly Leu Gly Ala Glu Ala Gly Leu Ala Thr
 50 55 60

Ala Val Val Ala Gly Ala Leu Ala Ala Val Phe Gly Gly Ser Asn Leu
 65 70 75 80

Gln Val Ser Gly Pro Thr Gly Ala Met Thr Val Val Leu Val Pro Ile
 85 90 95

Val Ala Arg Tyr Gly Pro Gly Gly Val Leu Thr Val Gly Leu Leu Ala
 100 105 110

Gly Leu Met Leu Ile Ala Leu Ala Leu Ala Arg Ala Gly Arg Tyr Met
 115 120 125
 Gln Tyr Val Pro Ala Pro Val Val Glu Gly Phe Thr Leu Gly Ile Ala
 130 135 140
 Cys Val Ile Gly Leu Gln Gln Val Pro Asn Ala Leu Gly Val Ala Lys
 145 150 155 160
 Pro Glu Gly Asp Lys Val Leu Val Val Thr Trp Arg Ala Val Glu Thr
 165 170 175
 Phe Ala Gly Ala Pro Asn Trp Thr Ala Ala Gly Leu Ala Ala Ala Val
 180 185 190
 Ala Ala Val Met Leu Thr Gly Ala Arg Trp Arg Pro Val Val Pro Phe
 195 200 205
 Ser Leu Leu Ala Val Thr Gly Ala Thr Val Val Ala Gln Leu Cys His
 210 215 220
 Leu Asp Ala Ala Arg Pro Ile Gly Asp Leu Pro Ala Gly Leu Pro Ala
 225 230 235 240
 Pro Ser Leu Ala Phe Leu Asp Leu Gly Ala Leu Gly Ser Leu Leu Ala
 245 250 255
 Pro Ala Val Ala Val Ala Ala Leu Ala Ala Leu Glu Ser Leu Leu Ser
 260 265 270
 Ala Ser Val Ala Asp Gly Met Thr Val Gly Gln Lys His Asp Pro Asp
 275 280 285
 Lys Glu Leu Phe Gly Gln Gly Leu Ala Asn Leu Ala Ala Pro Leu Phe
 290 295 300
 Gly Gly Val Pro Ala Thr Gly Ala Ile Ala Arg Thr Ala Val Asn Val
 305 310 315 320
 Arg Thr Gly Ala Ser Ser Arg Leu Ala Ala Leu Thr His Ala Ala Ile
 325 330 335
 Leu Ala Val Ile Val Phe Ala Ala Ala Pro Leu Val Ser Arg Ile Pro
 340 345 350
 Leu Ala Ala Leu Ala Gly Val Leu Ile Ala Thr Ala Ile Arg Met Val
 355 360 365
 Glu Val Gly Ser Leu Arg Ala Met Ala Arg Ala Thr Arg Ser Asp Gly
 370 375 380
 Leu Val Leu Ile Leu Thr Ala Val Ala Thr Val Ala Leu Asp Leu Val
 385 390 395 400
 Tyr Ala Val Ile Ile Gly Leu Leu Val Ala Gly Ala Leu Ala Leu Arg
 405 410 415

Ala Val Ala Lys Gln Val Arg Leu Asp Gln Val Ser Leu Lys Glu Asp
 420 425 430
 Leu Thr Gly Asp His Ser Ala Glu Glu His Ala Leu Leu Ala Glu His
 435 440 445
 Ile Val Ala Tyr Arg Ile Asp Gly Pro Leu Phe Phe Ala Ala Ala His
 450 455 460
 Arg Phe Leu Leu Glu Leu Ser Asp Val Ala Asp Val Arg Val Val Ile
 465 470 475 480
 Leu Arg Met Ser Arg Val Thr Thr Met Asp Ala Thr Gly Ala Leu Val
 485 490 495
 Leu Lys Asp Ala Val Thr Lys Leu Asn Arg Arg Gly Ile Thr Val Leu
 500 505 510
 Ala Ser Gly Val Arg Pro Gly Gln Arg Arg Val Leu Asp Ser Val Gly
 515 520 525
 Ala Leu Gly Leu Leu Arg Ala Ala Thr Gly Asp Asp Tyr Thr Gly Thr
 530 535 540
 Pro Glu Ala Ile Ala Ala Ala Arg Ser His Leu His Gly Ala Gly Val
 545 550 555 560
 Leu Ala Pro Ala Cys Pro Gly Pro Pro Pro Val Pro Pro Pro Cys
 565 570 575
 Ala Pro Ser Ala Arg Arg
 580

<210> 95
 <211> 239
 <212> PRT
 <213> Streptomyces verticillus

<220>
 <223> ORF28

<400> 95
 Met Ala Gln Asp Leu Asn Asp Trp Ile Glu Asp Glu Val Val Pro Tyr
 1 5 10 15
 Glu Glu Lys Pro Leu Glu Trp Ile Ser Gln Tyr His Phe Phe Arg Asp
 20 25 30
 Pro Ala Arg Ala Ala Tyr Val Asp His Thr Tyr Phe Phe Ser Pro Ala
 35 40 45
 Asp Gly Ala Ile Val Tyr Gln Lys Val Val Asp Pro Gln Glu Ser Ile
 50 55 60
 Ile Asp Ile Lys Gly Lys Pro Tyr Ser Leu Ala Ala Ala Leu Arg Asp
 65 70 75 80

Glu Ser Phe Gly His Arg Cys Leu Val Ile Gly Ile Phe Met Thr Phe
 85 90 95
 Phe Asp Val His Ile Asn Arg Met Pro Tyr Gly Gly Arg Leu Ser Phe
 100 105 110
 Ala Leu Lys Glu Pro Ile Gly Thr Phe Asn Leu Pro Met Leu Ala Met
 115 120 125
 Glu Gln Asp Leu Leu Glu Arg Leu Arg Val Asn Pro Ala His Ala Arg
 130 135 140
 Tyr Leu His Leu Asn Glu Arg Met Val Asn Arg Val Asp Ala Pro Arg
 145 150 155 160
 Leu Arg Gly Pro Tyr Trp Met Leu Gln Ile Ala Asp Tyr Asp Val Asp
 165 170 175
 Ser Ile Thr Pro Phe Cys Arg Arg Gln Gly Met Phe Arg Ser Gln Gly
 180 185 190
 Arg Arg Phe Ser Gln Ile Arg Tyr Gly Ser Gln Val Asp Leu Val Ile
 195 200 205
 Pro Met Ala Ala Asp Arg Glu Tyr Val Pro Val Glu Ala Val Gly Arg
 210 215 220
 His Val Lys Ala Gly Leu Asp Pro Leu Val Lys Ile Arg Trp Arg
 225 230 235

<210> 96

<211> 688

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF27

<400> 96

Met Gly Phe Arg Arg Ala Gln Arg Ala Gly Gly Pro Gly Ala Gly Arg
 1 5 10 15
 Arg Glu Ser Ala Arg Phe Arg Pro Asp Gly Pro Ser Ala Pro Arg Asp
 20 25 30
 Arg Pro Leu Pro Leu Ser Ala Gly Gln Leu Phe Glu Trp Val Phe Asp
 35 40 45
 Lys Leu Val Asp Gly Asp Leu Ser His Gln Pro Thr Ile Val Arg Leu
 50 55 60
 Arg Gly Pro Leu Asn Thr Ala Ala Leu Arg Met Ala Tyr Ala Arg Leu
 65 70 75 80
 Val Arg Arg His Glu Cys Leu Arg Thr Arg Phe Pro Val Ile Asp Gly
 85 90 95

Glu	Pro	Val	Gln	Val	Ile	Glu	Gly	Ile	Gly	Lys	Ala	Ala	Gly	Gly	Pro		
			100					105					110				
Leu	Pro	Leu	Ile	Asp	Leu	Arg	His	Leu	Pro	Glu	Ala	Leu	Arg	Ala	Arg		
		115					120					125					
Glu	Ile	Ala	Arg	Ile	Arg	Glu	Glu	Thr	Leu	Ser	Thr	Pro	Val	Pro	Phe		
	130					135					140						
Asp	Lys	Arg	Pro	Pro	Val	Arg	Val	Ala	Leu	Ile	Arg	Ala	Ala	Pro	Glu		
145					150					155					160		
Glu	His	Leu	Phe	Leu	Val	Gly	Ile	Pro	His	Ile	Thr	Ala	Asp	Leu	Trp		
				165					170					175			
Ser	Ala	Thr	Leu	Leu	Asn	Asp	Glu	Leu	Met	Ala	His	Tyr	Arg	Ala	Gly		
			180					185					190				
Ala	Glu	Gly	Thr	Pro	Ser	Arg	Ala	Pro	Thr	Pro	Val	Ala	Gln	Tyr	Ala		
		195					200					205					
Asp	Phe	Ala	Gln	Trp	Gln	Arg	Ala	Trp	Trp	Asn	Arg	Asp	Arg	Thr	Glu		
	210					215					220						
Arg	Glu	Ala	Gly	Arg	Trp	Arg	Ala	Arg	Leu	Asp	Gly	Leu	Ser	Ala	Val		
225					230					235					240		
Glu	Leu	Pro	Leu	Asp	Arg	Pro	Arg	Pro	Ala	Gly	Arg	Arg	Arg	Asp	Cys		
				245					250					255			
Phe	Leu	Ile	Gly	Asp	Thr	Phe	Asp	Ala	Glu	Leu	Ser	Asp	Arg	Leu	Arg		
			260					265					270				
Ala	Leu	Ala	Arg	Thr	Ala	Asp	Val	Thr	Leu	Tyr	Val	Val	Leu	Leu	Ala		
		275					280					285					
Ala	Phe	His	Trp	Leu	Val	Gly	Arg	Met	Ser	Gly	Ala	Gly	Arg	Leu	Val		
	290					295					300						
Thr	Thr	Ser	Leu	Val	Ala	Ala	Arg	His	Gly	Ser	Ala	Val	Gln	Gly	Met		
305					310					315					320		
Thr	Gly	Pro	Phe	Ser	Asp	Tyr	Leu	Ala	Leu	Val	Gly	Asp	Leu	Ser	Gly		
				325					330				335				
Asp	Pro	Asp	Phe	Leu	Glu	Ser	Leu	Arg	Arg	Val	Arg	Asp	Glu	Cys	Leu		
			340					345					350				
Thr	Ala	His	Asp	His	Gln	Arg	Leu	Pro	Phe	Ser	Gln	Val	Leu	Glu	Val		
		355					360					365					
Met	Asp	Pro	Gly	Arg	Glu	Leu	His	Pro	His	Pro	Leu	Glu	Gln	Leu	Gly		
	370					375					380						
Phe	Asn	Leu	His	Asn	Ile	Pro	Pro	Ala	Val	Met	Asp	Phe	Ser	Gly	Asp		
385					390					395					400		

Val Val Val Ser Ala Val Asn Pro Glu Gly Asp Asp Gly Glu Ser Gly
 405 410 415
 Asp Gly Glu Tyr Val Pro Trp Thr Ala Asp Leu Thr Phe Asp Val Tyr
 420 425 430
 Asp Tyr Gly Thr Gly His Met Pro Phe Asp Val Ile Leu Asp Arg Arg
 435 440 445
 Leu Ala Asp Pro Ala Thr Ala Arg Glu Trp Ala Gly His Tyr Arg Ser
 450 455 460
 Val Leu Arg Ala Val Val Ala Asp Pro Gly Val Arg Leu Ser Ala Leu
 465 470 475 480
 Gly Thr Leu Leu Ser Leu Pro Arg Pro Pro Ser Ala Thr Ser Phe Gly
 485 490 495
 Gly Arg Glu Ile Asp Val Arg Arg Val Glu Arg Glu Leu Ala Gly Arg
 500 505 510
 Asp Gly Ile Thr Ala Ala Leu Val Ala Val Ala Pro Arg Arg Leu Ala
 515 520 525
 Thr Gly Leu Arg Val Arg Glu Leu Val Ala Tyr Cys Ala Val Glu Gly
 530 535 540
 Thr Pro Arg Pro Asn Ala Ala His Asp Ile Arg Gly Arg Leu Arg Glu
 545 550 555 560
 Arg Leu Pro Asp Gly Trp Val Pro Thr Val Phe Val Glu Arg Pro Pro
 565 570 575
 Glu Glu Ile Arg Lys Ala Leu Ala Ala Arg Ala Ala Gly Gly Glu Arg
 580 585 590
 Ala Glu Pro Leu Pro Pro Pro Glu Asp Cys Val Pro Leu Pro Glu Glu
 595 600 605
 Gly Arg Pro Pro Ser Asp Pro Ser Glu Arg Arg Leu Ala Ala Leu Trp
 610 615 620
 Ala Glu Ile Leu Gly Ala Pro Pro Lys Ser Val Thr Glu Pro Phe Phe
 625 630 635 640
 Arg Val Gly Val Thr Asp Lys Asp Ala Leu Arg Phe Leu Ala Arg Val
 645 650 655
 Ala Glu Asp Phe Gly Val Thr Val Pro Phe Ala Asp Phe Leu Ser Ala
 660 665 670
 Pro Asn Leu Arg Met Val Lys Asp Asn Leu Ala Glu Lys Arg Arg Val
 675 680 685

<210> 97

<211> 2162

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF26

<400> 97

Met	Pro	Arg	Cys	Ala	Arg	Gly	Ala	Leu	Ser	Thr	Ala	Val	His	Thr	Thr	1	5	10	15
Arg	Gln	Gly	Ser	Trp	Asn	Val	Met	Glu	Thr	Ala	Asn	Ser	Gly	Tyr	Arg	20	25	30	
Val	Ser	Pro	Gln	Gln	Arg	His	Leu	Trp	Ala	Met	Leu	Thr	Arg	Gly	Arg	35	40	45	
Asp	Gly	Gly	Arg	Arg	Ala	Phe	Thr	Gln	Ser	Ala	Val	Val	Val	Asp	Arg	50	55	60	
Ser	Leu	Asp	Ala	Ala	Arg	Leu	Arg	Ala	Ala	Leu	Ala	Ser	Val	Val	Ala	65	70	75	80
Ala	His	Glu	Pro	Leu	Arg	Thr	Thr	Phe	Thr	Gly	Leu	Ala	Gly	Arg	Thr	85	90	95	
Ala	Pro	Val	Gln	Val	Val	His	Asp	Pro	Asp	Glu	Gln	Pro	Leu	Ser	Val	100	105	110	
Val	Asp	Leu	Pro	Pro	Ser	Cys	Ala	Asp	Gly	Ser	Gly	Pro	Glu	Leu	Asp	115	120	125	
Glu	Leu	Arg	Leu	Arg	Glu	Arg	Ala	Ala	Leu	Asp	Pro	Arg	Gly	Gly	Pro	130	135	140	
Val	Phe	Arg	Ala	Ala	Leu	Ala	Arg	Ala	Gly	Glu	Asp	Arg	Ala	Val	Leu	145	150	155	160
Val	Leu	Thr	Ala	His	Ala	Leu	Val	Ala	Asp	Arg	Leu	Ser	Leu	Arg	Leu	165	170	175	
Leu	Ala	Gly	Gln	Ile	Leu	Ala	Ala	Tyr	Ser	Gly	Glu	Thr	Val	Ser	Pro	180	185	190	
Asp	Gly	Pro	Pro	Pro	Leu	Gln	Tyr	Ala	Asp	Phe	Ala	Ala	Trp	His	His	195	200	205	
Asp	Leu	Leu	Thr	Ala	Glu	Asp	Ala	Ala	Pro	Asp	Arg	Ala	His	Trp	Ala	210	215	220	
Ala	His	Thr	Ala	Thr	Ala	Gly	Thr	Gly	Pro	Leu	Pro	Gly	Val	Val	Arg	225	230	235	240
Pro	Gly	Ala	Ala	Pro	Gly	Pro	Trp	Arg	Ala	Arg	Glu	Trp	Glu	Leu	Pro	245	250	255	
Ala	Glu	Leu	Val	Ala	Gly	Ile	Asp	Gly	Val	Ala	Gly	Lys	Leu	Ser	Thr	260	265	270	

Asp	Pro	Ala	Thr	Val	Leu	His	Ala	Ala	Phe	Arg	Ile	Ala	Val	Trp	Arg		
		275					280					285					
Leu	Ala	Gly	Glu	Arg	Asn	Leu	Pro	Val	Ala	Leu	Thr	Arg	Asp	Gly	Arg		
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Ser	His	Pro	Glu	Leu	Arg	Thr	Ala	Ile	Gly	Ala	Phe	Glu	Arg	Glu	Leu		
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Pro	Leu	Val	His	Glu	Ile	Arg	His	Glu	Thr	Ala	Phe	Ala	Glu	Tyr	Ala		
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Arg	Ala	Leu	Asp	Ala	Leu	Val	Ala	Glu	Gly	Glu	Glu	Leu	Leu	Asp	His		
			340					345					350				
Cys	Asp	Pro	Glu	Leu	Leu	Gly	Ser	Leu	Asp	Gly	Thr	Ala	Glu	Gly	Pro		
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Cys	Phe	Thr	Phe	Thr	His	His	Gln	Ala	Glu	Thr	Pro	Val	Arg	Arg	Ala		
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Val	Arg	Leu	Thr	Ala	Arg	Arg	Asp	Gly	Ala	Arg	Leu	Arg	Met	Glu	Leu		
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Gly	Tyr	Asp	Glu	Gly	Arg	Ile	Asp	Glu	Thr	Phe	Pro	Glu	Asn	Ala	Ala		
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Ala	Cys	Leu	Thr	Arg	Ile	Leu	Glu	Gly	Val	Val	Ser	Ala	Pro	Glu	Gly		
		435					440					445					
Pro	Val	Gly	Asp	Ile	Arg	Met	Leu	Ser	Asp	Glu	Thr	Ala	Arg	Leu	Leu		
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His	Glu	Leu	Phe	Ala	Glu	Gln	Ala	Ala	Arg	Thr	Pro	Gly	Ala	Val	Ala		
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Gly	Phe	Pro	Arg	Lys	Arg	Leu	Glu	Phe	Val	Leu	Arg	Glu	Thr	Ala	Ala		
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Thr	Leu	Asp	Asp	Ala	Gly	Val	Thr	Pro	Val	Ala	Leu	Asp	Ala	Asp	Arg		
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Arg	Arg	Ile	Ala	Ala	His	Pro	Ala	Gly	Pro	Thr	Gly	Ile	Ala	Thr	Thr		
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Pro	Asp	Ala	Pro	Ala	Tyr	Val	Val	Tyr	Thr	Ser	Gly	Thr	Thr	Gly	Lys		
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Pro	Asn	Gly	Val	Arg	Val	Pro	His	Arg	Gly	Leu	Thr	Asn	Tyr	Leu	Thr		
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Trp	Cys	Thr	Gly	Ala	Tyr	Gly	Leu	Asp	Gly	Gly	Thr	Gly	Thr	Leu	Val		
			660					665					670				
His	Thr	Ser	Ile	Ser	Phe	Asp	Leu	Thr	Leu	Thr	Thr	Leu	Phe	Gly	Pro		
		675					680					685					
Leu	Leu	Ala	Gly	Gly	Gln	Val	Val	Met	Leu	Ser	Glu	Thr	Ala	Gly	Val		
	690					695					700						
Thr	Gly	Leu	Ile	Ala	Ala	Leu	Arg	Ser	Arg	Arg	Asp	Leu	Thr	Leu	Val		
705					710					715					720		
Lys	Leu	Thr	Pro	Thr	His	Leu	Asp	Val	Val	Asn	Gln	Leu	Leu	Thr	Pro		
				725					730					735			
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	770					775					780						
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Pro	Ile	Ala	Asn	Thr	Thr	Val	His	Leu	Leu	Asp	Gln	Arg	Arg	Arg	Pro		
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 Glu Ala Val Leu Ala Ser His Pro Gly Val Gly Gln Ala Val Val Val
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 Leu Thr Leu Thr Gly Tyr Val Val Pro Ala Arg Gly Ala Gln Ala Pro
 930 935 940
 Pro His Glu Glu Leu Ile Ala Tyr Cys Arg Glu Arg Leu Pro Glu His
 945 950 955 960
 Phe Val Pro Ala Val Leu Val Thr Leu Asp Ala Leu Pro Val Thr Gly
 965 970 975
 His Gly Lys Ile Asp Arg Gly Ala Leu Pro Lys Pro His Ala Arg Ala
 980 985 990
 Arg Asp Gly Ala Ala Tyr Val Ala Pro Arg Thr Ala Thr Glu Glu Ile
 995 1000 1005
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 1125 1130 1135
 Pro Phe Asp Leu Ala Val Leu Arg Met Val Val Arg Gln Leu Val Glu
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 1155 1160 1165
 Pro Leu Gln Leu Val His Arg Glu Phe Ala Asp Pro Leu His Tyr Glu
 1170 1175 1180

Asp Leu Arg Gly Arg Ser Ala Glu Glu Gln Asp Ala Arg Val Glu Glu
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 Trp Ile Glu Arg Glu Lys Glu Arg Gly Phe Glu Leu His Glu Phe Pro
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 1285 1290 1295
 Ser Tyr Leu Ala Asp Ala Thr Leu Met Arg Leu Pro Arg Pro Gly Thr
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 1330 1335 1340
 His Ala Val Pro Leu Lys Thr Val Leu Leu Ala Ala His Met Val Val
 1345 1350 1355 1360
 Met Ser Leu Tyr Gly Gly His Glu Asp Thr Leu Thr Tyr Thr Val Thr
 1365 1370 1375
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 1380 1385 1390
 Val Asn Ser Leu Ala Leu Arg Val Arg Met Thr Gly Gly Thr Trp Ala
 1395 1400 1405
 Asp Leu Ile Thr Ala Thr Leu Glu Ser Glu Arg Ala Ser Met Pro Tyr
 1410 1415 1420
 Arg Arg Leu Pro Met Ala Glu Leu Lys Arg His Gln Gly Asn Glu Pro
 1425 1430 1435 1440
 Leu Ala Glu Thr Leu Phe Phe Phe Thr Asn Tyr His Val Phe His Val
 1445 1450 1455
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Glu Thr Gly Glu Leu Glu Val Arg Ile Glu Tyr Asp Ser Leu Gln Phe
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 Arg Ser Asp Arg Asp Arg Ala Ala Leu Ala Val Leu Thr Arg Gly Pro
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 Ala Ala Asp Arg Pro Asp Ala Pro Ala Val Gln Leu Asp Thr Asp Val
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 Pro Arg Asn Ala Ala Tyr Val Met Tyr Thr Ser Gly Ser Thr Gly Glu
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 Pro Lys Gly Ile Val Val Glu His Arg Asn Val Val Ala Ser Leu Ala
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 Ala Arg Gly Ala His Tyr Ala Ala Gly Pro Gly Arg Phe Leu Leu Leu
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 Ser Ser Phe Ala Phe Asp Ser Ser Val Ala Gly Ile Phe Trp Thr Leu
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 Thr Gln Gly Gly Thr Leu Val Leu Pro Gly Glu Gly Gln Gln Leu Asp
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 Pro Ala Ala Leu Val Glu Thr Ile Ala Arg Gln Arg Pro Thr His Thr
 1780 1785 1790

Leu Ala Ile Pro Ser Leu Leu Ala Pro Val Leu Asp Gln Ala Ala Pro
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 Gly Asp Leu Ala Ser Leu Arg Thr Val Ile Ala Ala Gly Glu Ser Cys
 1810 1815 1820
 Pro Ala Glu Leu Ala Ala Ala Cys Arg Asp Leu Leu Pro Gly Ser Thr
 1825 1830 1835 1840
 Phe His Asn Glu Tyr Gly Pro Thr Glu Thr Thr Val Trp Ser Thr Val
 1845 1850 1855
 Trp Ser Gln Glu Asn Glu His Asp Gly Pro His Leu Pro Ile Gly Arg
 1860 1865 1870
 Pro Val Ala Gly Thr Trp Val His Pro Arg Asp His Arg Gly Arg Thr
 1875 1880 1885
 Val Pro Leu Gly Val Ala Gly Glu Leu Ser Ile Gly Gly Ala Gly Val
 1890 1895 1900
 Ala Arg Gly Tyr Leu Gly Arg Pro Arg Asp Thr Ala Ala Ala Phe Arg
 1905 1910 1915 1920
 Pro Asp Pro Glu Ala Thr Ala Pro Gly Gly Arg Ala Tyr Ala Thr Gly
 1925 1930 1935
 Asp Leu Gly Arg Tyr Leu Pro Asp Gly Asn Leu Glu Phe Leu Gly Arg
 1940 1945 1950
 Ala Asp His Gln Val Lys Ile Arg Gly Phe Arg Val Glu Leu Gly Glu
 1955 1960 1965
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 1970 1975 1980
 Met Ala Arg Gly Asp His Pro Gly Asp Gln Val Leu Val Ala Tyr Val
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 Leu Pro Ala Pro Gly Arg Arg Pro Glu Pro Ala Asp Ile Gln Gly Tyr
 2005 2010 2015
 Val Arg Asp Arg Leu Pro Arg Tyr Met Val Pro Thr Ala Val Ile Val
 2020 2025 2030
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 Glu Pro Gly Thr Asp Thr Glu Arg Ala Leu Ala Ala Ile Trp Ala Asp
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Gly Gly Glu Ser Leu Arg Ala Met Gln Ala Thr Ala Ala Ala Asn Lys
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 Val Phe Pro Ser Val Gly Glu Thr Pro Arg Gln Arg Val Thr Asp Arg
 65 70 75 80
 Ala Ala Pro Leu Arg Thr Val Asp Leu Thr His Leu Thr Pro Ala Ala
 85 90 95
 Ala Glu Ala Glu Thr Ala Arg Thr Leu Arg Cys Ala Ala Ala Arg Pro
 100 105 110
 Phe Arg Leu Asp Thr Gly Pro Leu Ala Glu Trp Thr Leu Leu Arg Arg
 115 120 125
 Ala Pro Gly His Ala Leu Leu Val Leu Ser Val His His Ile Val Phe
 130 135 140
 Asp Gly Gly Ser Leu His Val Val Cys Arg Glu Leu Glu Glu Ala Tyr
 145 150 155 160
 Gly Ala Ala Leu Ala Gly Arg Pro Asp Pro Leu Gly Thr Pro Ala Pro
 165 170 175

Gly	Tyr	Gly	Arg	Gln	Cys	Arg	Thr	Arg	Ala	Ala	Glu	Gln	Asp	Glu	Ala	180	185	190	
Gly	Arg	Glu	Phe	Trp	Arg	Arg	Glu	Leu	Ser	Gly	Ala	Pro	Pro	Arg	Thr	195	200	205	
Thr	Val	Phe	Arg	Gly	Thr	Gly	Arg	Pro	Ala	Gly	Pro	Pro	Ala	Arg	Ala	210	215	220	
Thr	Val	His	Tyr	Gly	Thr	Asp	Asp	Pro	Ala	Pro	Thr	Ala	Asp	Phe	Cys	225	230	235	240
Arg	Glu	His	Ala	Val	Thr	Gly	Tyr	Val	Leu	Leu	Leu	Ala	Ala	Leu	Ala	245	250	255	
Cys	Leu	Val	Ala	Arg	Tyr	Thr	Gly	Arg	Thr	Asp	Val	Val	Ile	Gly	Ser	260	265	270	
Pro	Val	Gly	Leu	Arg	Glu	Asp	Pro	Glu	Gly	Leu	Ala	Thr	Val	Gly	Pro	275	280	285	
Met	Leu	Asn	Leu	Leu	Pro	Leu	Arg	Leu	Arg	Leu	His	Gly	Asp	Pro	Gly	290	295	300	
Phe	Gly	Glu	Val	Leu	Ala	Arg	Thr	Arg	Glu	Thr	Leu	Leu	Gly	Ala	Leu	305	310	315	320
Glu	His	Arg	Thr	Thr	Pro	Phe	Glu	Asp	Ile	Val	Asp	Ala	Val	Gly	Ala	325	330	335	
Asp	Arg	Asp	Pro	Asp	Val	Ser	Pro	Leu	Phe	Gln	Ile	Leu	Phe	Ala	His	340	345	350	
Glu	Arg	Pro	Pro	Ala	Pro	Pro	Ala	Leu	Pro	Gly	Val	Arg	Ala	Arg	Val	355	360	365	
Val	Pro	Val	Pro	Ala	Pro	Ala	Ala	Lys	Tyr	Glu	Leu	Ala	Val	Thr	Ala	370	375	380	
Thr	Glu	Thr	Pro	Asp	Gly	Leu	Arg	Leu	Ile	Val	Glu	Ala	Glu	His	Gly	385	390	395	400
His	Gly	Glu	Pro	Ala	Glu	Leu	Ala	Ala	Phe	Ala	Arg	His	Phe	Gly	Val	405	410	415	
Leu	Leu	Ala	Ala	Gly	Val	Arg	Ala	Pro	Asp	Thr	Pro	Leu	Ser	Arg	Leu	420	425	430	
Pro	Leu	Leu	Thr	Asp	Glu	Glu	Arg	Arg	Arg	Leu	Thr	Asp	Thr	Thr	Ala	435	440	445	
Pro	Arg	Thr	Ala	Pro	Glu	Ala	Pro	Tyr	Arg	Pro	Leu	His	Arg	Leu	Val	450	455	460	
Glu	Glu	Ser	Ala	Ala	Arg	Arg	Pro	Asp	Ala	Leu	Ala	Val	Val	Gly	Gly	465	470	475	480

Thr	Arg	His	Leu	Ser	Tyr	Arg	Glu	Leu	Asn	Cys	Arg	Ala	Asn	Arg	Arg	485	490	495
Ala	Ala	Trp	Leu	Arg	Arg	Ala	Gly	Ile	Gly	Thr	Glu	Asp	Val	Val	Gly	500	505	510
Val	Arg	Leu	Glu	Arg	Gly	Pro	Glu	Leu	Leu	Val	Ser	Leu	Leu	Ala	Val	515	520	525
Leu	Lys	Ala	Gly	Ala	Ala	Tyr	Leu	Pro	Val	Asp	Pro	Ala	Leu	Pro	Ala	530	535	540
Glu	Arg	Val	Arg	Leu	Met	Leu	Asp	Asp	Ala	Arg	Ala	Ala	Leu	Leu	Leu	545	550	555
Thr	Glu	Thr	Ala	Leu	Gly	Thr	Pro	Pro	Ala	Pro	Ala	Gly	Thr	Pro	Val	565	570	575
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Ser	Ala	Ala	Ala	Phe	Leu	Arg	Trp	Ala	Gly	Arg	Ala	Phe	Asp	Gly	Gly	625	630	635
Glu	Leu	Ala	Ala	Val	Leu	Ala	Thr	Thr	Ser	Ala	Gly	Phe	Asp	Leu	Ser	645	650	655
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Thr	Leu	Leu	Asn	Thr	Val	Pro	Ser	Ala	Ala	Ala	Ala	Leu	Leu	Asp	Ala	690	695	700
Asp	Gly	Leu	Pro	Asp	Gly	Leu	Thr	Ala	Val	Asn	Leu	Ala	Gly	Glu	Pro	705	710	715
Leu	Thr	Ala	Glu	Leu	Val	Ala	Arg	Leu	His	Ala	Arg	Leu	Pro	Lys	Ala	725	730	735
Ala	Val	Arg	Asn	Leu	Tyr	Gly	Pro	Ser	Glu	Ala	Thr	Thr	Tyr	Ala	Thr	740	745	750
Ala	Ala	Leu	Val	Pro	Ala	Gly	Gly	Thr	Glu	Ala	Pro	Ala	Ile	Gly	Arg	755	760	765
Ala	Leu	Gly	Ala	Ala	Arg	Val	Trp	Thr	Ala	Asp	Asp	Arg	Gln	Arg	Pro	770	775	780

Leu Pro Gly Ala Val Val Gly Glu Leu Leu Ile Gly Gly Thr Ala Pro
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 Pro Asp Pro Thr Gly Pro Pro Gly Ser Arg Leu Tyr Arg Thr Gly Asp
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 Leu Ala Val Arg Arg Pro Asp Gly Arg Phe Val Phe Leu Gly Arg Lys
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 Asp Glu Gln Ile Lys Leu Arg Gly Val Arg Ile Glu Pro Gly Glu Val
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 Glu Ala Ala Leu Arg Gln Cys Ala Pro Val Ala Ala Ala Ala Val Val
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 965 970 975
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Asp Ala Ile Ser His Phe Thr Ala Asp Glu Arg Leu Ala Arg Gly Arg
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Asp Pro Glu Leu Val Arg His Pro Arg Phe Val Gly Ala Glu Gly Val
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Leu Gly Asp Val Ser Leu Phe Asp Ala Glu Phe Phe Gly Cys Ser Pro
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Arg Glu Ala Glu Val Met Asp Pro Gln His Arg Leu Cys Leu Glu Glu
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Ala Trp His Val Phe Asp Thr Ala Gly Tyr Asp Pro Ala Ala Thr Gly
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Thr Ala Val Gly Val Phe Leu Ser Ala Ser Leu Ser Ser Tyr Leu Ile
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Arg Asn Val Leu Pro Gly Gly Ala Ala Gln Arg Leu Leu Gly Gly Phe
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Pro Leu Leu Ile His Asn Asp Lys Asp Phe Leu Ala Thr Thr Val Ser
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His Lys Leu Gly Leu Thr Gly Pro Ser Tyr Ala Val Gly Ser Ala Cys
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Ser Ser Ser Leu Val Ala Val His Leu Ala Cys Gln Ser Leu Leu Thr
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Glu Glu Cys Asp Met Ala Leu Ala Gly Gly Val Ser Leu Gln Val Pro
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Gln Gly Gln Gly Tyr Val His Ala Asp Asp Gly Ile Tyr Ser Pro Asp
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Ser Gly Val Gly Leu Val Leu Leu Lys Arg Leu Ala Asp Ala Val Arg
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Pro	Ala	Ile	Asp	Phe	Ala	Thr	Thr	Pro	Phe	Tyr	Val	Thr	Ala	Asp	Thr	405	410	415	
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Phe	Gly	Ile	Gly	Gly	Thr	Asn	Ala	His	Val	Ile	Leu	Glu	Gln	Ala	Pro	435	440	445	
Pro	Ala	Ala	Pro	Arg	Ala	Asp	Arg	Thr	Ala	Gly	Val	Pro	Met	Pro	Leu	450	455	460	
Val	Val	Ser	Ala	Arg	Thr	Arg	Glu	Ala	Leu	Ala	Glu	Ala	Val	Arg	Asp	465	470	475	480
Leu	Ala	Ala	Trp	Ser	Ala	Pro	Glu	Pro	Gly	Thr	Arg	Leu	Ala	Asp	Leu	485	490	495	
Ala	Ala	Thr	Leu	Ala	Gly	Arg	Arg	Ala	Phe	Pro	Tyr	Arg	Ala	Ala	Val	500	505	510	
Val	Cys	His	Asp	Leu	Pro	Glu	Ala	Ala	Arg	Leu	Leu	Gly	Gly	Ala	Arg	515	520	525	
Gly	Glu	Thr	Ala	Leu	Pro	Gly	Arg	Glu	Ala	Val	Phe	Leu	Phe	Pro	Gly	530	535	540	
Gln	Gly	Thr	Leu	Pro	Pro	Asp	Thr	Gly	Arg	Gly	Leu	Tyr	Ala	Asp	Val	545	550	555	560
Pro	Ala	Phe	Arg	Ala	His	Phe	Asp	Ala	Cys	Ala	Glu	Gly	Phe	Ala	Pro	565	570	575	

Leu	Gly	Thr	Asp	Leu	His	Ala	Ala	Leu	Gly	Ala	Pro	Ala	Asp	Asp	Thr	
			580					585					590			
Arg	Ala	Ala	Gln	Pro	Ala	Leu	Phe	Ala	Val	Glu	Tyr	Ala	Leu	Ala	Arg	
		595					600					605				
Thr	Leu	Met	Asp	Trp	Gly	Val	Arg	Pro	Ala	Ala	Met	Leu	Gly	His	Ser	
	610					615					620					
Leu	Gly	Glu	Tyr	Val	Ala	Ala	Thr	Leu	Ala	Gly	Val	Leu	Ser	Leu	Pro	
625					630					635					640	
Asp	Ala	Leu	Thr	Leu	Val	Arg	Ala	Arg	Ala	Glu	Ala	Gln	His	Thr	Met	
				645					650					655		
Pro	Pro	Gly	Arg	Met	Leu	Ala	Val	Pro	Leu	Thr	Pro	Asp	Asp	Leu	Arg	
			660					665					670			
Pro	Leu	Leu	Pro	Pro	Glu	Val	Glu	Phe	Ser	Ala	Phe	Asn	Ala	Pro	Gly	
	675						680					685				
Arg	Cys	Val	Val	Gly	Gly	Pro	Pro	Glu	Pro	Val	Ala	Glu	Leu	Arg	Ala	
	690					695					700					
Arg	Leu	Ala	Arg	Arg	Gly	Val	Pro	Ala	Ala	Glu	Leu	Ala	Thr	Ala	His	
705					710					715					720	
Ala	Phe	His	Ser	Ala	Ala	Val	Glu	Pro	Leu	Leu	Asp	Gly	Phe	Arg	Gly	
				725					730					735		
Val	Leu	Glu	Gly	Val	Arg	Leu	Arg	Pro	Pro	Arg	Leu	Arg	Tyr	Val	Ser	
			740					745					750			
Ser	Leu	Thr	Gly	Asp	Trp	Ala	Asp	Ala	Ala	Val	Thr	Thr	Pro	Ala	Tyr	
		755					760					765				
Trp	Leu	Ala	His	Leu	Arg	Arg	Pro	Val	Arg	Phe	Ala	Asp	Gly	Leu	Arg	
	770					775					780					
Arg	Cys	Leu	Asp	Leu	Gly	Pro	Val	Ala	Leu	Val	Glu	Thr	Gly	Pro	Arg	
785					790					795					800	
Ala	Gly	Leu	Thr	Gly	Leu	Ala	Arg	Arg	Ala	Ala	Gly	Pro	Gly	Glu	Pro	
				805					810					815		
Pro	Tyr	Thr	Val	Arg	Cys	Leu	Ala	Ala	Pro	Asp	Glu	Ala	Ala	Ser	Leu	
			820					825					830			
Thr	His	Ala	Val	Ala	Val	Leu	Trp	Arg	Ser	Gly	Cys	Ala	Val	Asp	Trp	
		835					840					845				
Thr	Ala	Phe	His	Arg	Pro	Gly	Arg	Pro	Arg	Arg	Thr	Thr	Val	Pro	Gly	
	850					855					860					
Tyr	Pro	Phe	Gln	Arg	Val	Arg	His	Trp	Ile	Asp	Ala	Pro	Asp	Glu	Ser	
865					870					875					880	

Glu	Pro	Thr	Asp	Leu	Ala	Thr	Ala	Leu	Arg	Ala	Glu	Leu	Arg	Thr	Asp
				885				890				895			
Gly	Asp	Pro	Pro	Leu	Ala	Val	Asp	Gln	Arg	Pro	Gly	Leu	Arg	Thr	Gly
				900				905				910			
Leu	Asn	Arg	Leu	Cys	Ala	Ala	Leu	Ala	Arg	Asp	Tyr	Leu	Ala	Thr	Gly
				915				920				925			
Val	Glu	Ala	Ser	Gly	Val	Leu	Pro	Gly	Phe	His	Arg	Phe	Leu	Asp	Tyr
				930				935				940			
Leu	Arg	Thr	Leu	Ala	Ala	Ser	Ala	Pro	Ala	Ala	Asp	Asp	Ala	Gly	Thr
945				950				955				960			
Ile	Ala	Ala	Glu	Ile	Thr	Ala	Ala	His	Pro	Ser	Phe	Ser	Gly	Leu	Val
				965				970				975			
Asp	Leu	Leu	Arg	His	Cys	Ala	Gln	Gly	Tyr	Pro	Arg	Ala	Leu	Ser	Thr
				980				985				990			
Pro	Gly	Ala	Ala	Leu	Asp	Val	Leu	Tyr	Pro	Ala	Gly	Ser	Gly	Asp	Leu
				995				1000				1005			
Leu	Arg	Arg	Thr	Leu	Gly	Glu	Gly	Thr	Ala	Asp	His	Arg	Ala	Thr	Gly
1010				1015				1020							
Arg	Leu	Thr	Arg	Leu	Ala	Gly	Ser	Leu	Leu	Asp	Arg	Leu	Ala	Ala	Asp
1025				1030				1035				1040			
Arg	Glu	Pro	Gly	Arg	Pro	Leu	Arg	Val	Leu	Glu	Ala	Gly	Ala	Gly	Ala
				1045				1050				1055			
Gly	Ser	Leu	Thr	Gln	Ala	Leu	Val	Thr	Arg	Ala	Pro	Gly	Arg	Leu	Asp
				1060				1065				1070			
Tyr	His	Ala	Thr	Asp	Ile	Ser	Arg	His	Phe	Val	Thr	Ala	Leu	Gly	Arg
1075				1080				1085							
Glu	Ala	Ala	Arg	Arg	Gly	Leu	Asp	Phe	Val	Arg	Ala	Arg	Val	Leu	Asp
1090				1095				1100							
Ile	Ala	Arg	Asp	Pro	Gly	Glu	Gln	Gly	Phe	Ala	Gly	Glu	Arg	Phe	Asp
1105				1110				1115				1120			
Val	Val	Cys	Gly	Leu	Asp	Val	Val	His	Ala	Thr	Pro	Asp	Leu	Arg	Thr
				1125				1130				1135			
Thr	Leu	Gly	His	Leu	Arg	Ser	Leu	Met	Ala	Pro	Asp	Gly	Thr	Leu	Ala
				1140				1145				1150			
Leu	Ile	Glu	Thr	Thr	Ala	Asp	Asp	Pro	Trp	Leu	Thr	Met	Ile	Trp	Gly
1155				1160				1165							
Leu	Thr	Asp	Gly	Trp	Trp	His	His	Thr	Asp	Arg	Arg	Thr	His	Gly	Pro
1170				1175				1180							

Leu Leu Asp Ala Ala Gly Trp Arg Ala Leu Leu Ala Gly Glu Asp Phe
 1185 1190 1195 1200
 Ala Thr Ala Asp Val Ile Val Pro Pro Asp Gly Pro Gln Asp Ala Ala
 1205 1210 1215
 Leu Leu Leu Ala Arg Gln Thr Pro Arg Pro Ala Ala Ala Ala Pro Ser
 1220 1225 1230
 Val Gly Lys Arg Asp Val Gly Thr Trp Cys Tyr Ala Arg Gly Trp Arg
 1235 1240 1245
 His Ala Ala Pro Ala Asp Pro Ala Pro Leu Thr Gly Gly Cys Leu Leu
 1250 1255 1260
 Leu Gly Asp Gly Asp Thr Ala Lys Ala Val Ala Ser Arg Leu Glu Ala
 1265 1270 1275 1280
 Leu Gly Val Pro Val Thr Thr Val Gly Gly Gly Arg Pro Pro Gly Pro
 1285 1290 1295
 Glu Arg Tyr Arg Glu Leu Val Gly Pro Ala Thr Arg Leu Ala Val Asp
 1300 1305 1310
 Leu Trp Pro Leu Arg Asp Ala Ser His Arg Gly Arg Ala Ala Gly Ala
 1315 1320 1325
 Ala Gly Val Arg Thr Ala Gln Asp Ala Ala Leu His Asn Leu Leu His
 1330 1335 1340
 Leu Ala Arg Ala Phe Gly Ala Leu Glu Glu Arg His Pro Ala Arg Val
 1345 1350 1355 1360
 Val Thr Val Thr Thr Gly Ala His Asp Val Leu Gly Asp Asp Leu Ala
 1365 1370 1375
 His Pro Glu His Ala Thr Val Pro Ala Ala Ala Lys Val Ile Pro Arg
 1380 1385 1390
 Glu Tyr Pro Trp Ile Ala Cys Thr Ala Leu Asp Val Glu Pro Gly Leu
 1395 1400 1405
 Asp Ala Glu Arg Leu Ala Asp Leu Ile Val Arg Glu Leu Gly Ala Ala
 1410 1415 1420
 Arg Glu Thr Thr Val Thr Ala Cys Arg Gly Arg Arg Arg Phe Thr Pro
 1425 1430 1435 1440
 Cys Pro Val Arg Gln Pro Leu Pro Ala Ala Pro Glu Arg Pro Ala Val
 1445 1450 1455
 Arg Pro Gly Gly Val Tyr Leu Val Cys Gly Gly Leu Gly Gly Ile Gly
 1460 1465 1470
 Leu His Leu Ala Glu Tyr Leu Gly Arg Ala Arg Thr Thr Val Val Leu
 1475 1480 1485

Thr His Arg Arg Pro Phe Pro Ala Pro Gly Ala Trp Asp Gly Leu Pro
 1490 1495 1500
 Ala Gly His Pro Glu Ala Ala Val Val Arg Arg Leu Arg Ser Leu Ala
 1505 1510 1515 1520
 Ala Thr Gly Ala Thr Val Val Val Arg Arg Ala Asp Leu Thr Asp His
 1525 1530 1535
 Asp Ala Met Arg Ala Leu Ala Asp Glu Val Glu Gln Ala His Gly Pro
 1540 1545 1550
 Val Arg Gly Val Val His Ala Ala Gly Val Pro Asp Thr Ala Gly Met
 1555 1560 1565
 Ile Gln Arg Arg Asp Arg Ala Gly Thr Asp Ala Ala Leu Ala Ala Lys
 1570 1575 1580
 Leu Thr Gly Thr Leu Val Leu Asp Glu Val Phe Ala His Arg Asp Leu
 1585 1590 1595 1600
 Asp Phe Leu Val Leu Cys Ser Ser Ile Gly Thr Val Leu His Lys Leu
 /1605 1610 1615
 Lys Phe Gly Glu Val Gly Tyr Val Ala Gly Asn Glu Phe Leu Asp Ala
 1620 1625 1630
 Tyr Ala Ala His Arg Ala Ala Arg Arg Pro Gly Arg Thr Leu Ser Ile
 1635 1640 1645
 Ala Trp Thr Asp Trp Arg Glu Ser Gly Met Trp Ala Ala Ala Gln Arg
 1650 1655 1660
 Arg Leu Thr Glu Arg Tyr Gly Thr Gly Ala Asp Leu Pro Val Pro Pro
 1665 1670 1675 1680
 Gly Gly Asp Leu Leu Gly Ala Ile Ser Pro Glu Glu Gly Val Asp Val
 1685 1690 1695
 Phe Ala Arg Leu Leu Ala Ala Asp Thr Gly Pro Asn Val Ile Val Ser
 1700 1705 1710
 Ala Gln Asp Leu Asp Glu Leu Leu Ala Arg His Ala Ala Tyr Thr Thr
 1715 1720 1725
 Asp Asp His Leu Ala Ala Leu Gly Asp Leu Arg Ile Ala Ala Ala Arg
 1730 1735 1740
 Asp Arg Ser Ala Pro Ala Ala Pro Tyr Ala Ala Pro His Thr Pro Ala
 1745 1750 1755 1760
 Gln Arg Arg Ile Ala Gly Trp Tyr Arg Asp Leu Leu Gly Val Glu His
 1765 1770 1775
 Val Gly Leu Asp Asp Asp Phe Phe Ala Leu Gly Gly Asp Ser Leu Leu
 1780 1785 1790

Ala Leu Arg Leu Leu Ser Gln Leu Arg Asp Ala Tyr Gly Val Glu Ile
 1795 1800 1805

Ser Val Ala Arg Met Phe Asp Glu Pro Thr Val Ala Ala Leu Ala Ala
 1810 1815 1820

Ala Thr Gly Pro Pro Pro Glu Glu Thr Pro Gly Gln Glu Glu Val Val
 1825 1830 1835 1840

Leu

<210> 100
 <211> 1218
 <212> PRT
 <213> *Streptomyces verticillus*

<220>
 <223> ORF23

<400> 100
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Gln Val Thr Leu Thr Ala Asp Gly Asp Arg Leu His Cys Arg Ala Pro
 20 25 30

Arg Gly Ala Leu Thr Asp Glu Leu Leu Ala Thr Ile Arg Ala Arg Arg
 35 40 45

Asp Glu Leu Leu Ala His Leu Arg Ala Asp Arg Arg Ile Pro Arg His
 50 55 60

Asp Gly Pro Ala Pro Leu Ser Phe Ala Gln Glu Arg Leu Trp Leu Leu
 65 70 75 80

His Gln Phe His Pro His Asp Ser Ala Tyr Asn Ile Pro Leu His Ile
 85 90 95

Ala Leu Arg Gly Pro Leu Asn Pro Ala Ala Leu Arg Ala Ala Leu Ala
 100 105 110

Glu Val Val Arg Arg His Asp Val Leu Arg Thr Arg Tyr Ala Ile Ser
 115 120 125

Arg Gly Leu Pro Arg Pro Val Val Glu Pro Ala His Thr Pro Pro Leu
 130 135 140

Pro Leu Thr Asp Leu Thr Gly Leu Pro Ala His His Arg Asp Ala Glu
 145 150 155 160

Leu Ala Arg Leu Ala Ala Gln Glu Ala Arg Arg Pro Phe Asp Leu Ala
 165 170 175

Gln Gly Pro Val Leu Arg Ala Arg Leu Leu Arg Thr Ala Pro Glu Glu
 180 185 190

His	Arg	Leu	Leu	Leu	Thr	Arg	His	His	Ile	Ala	Ser	Asp	Gly	Trp	Ser	195	200	205	
Leu	Asp	Ile	Leu	Leu	Arg	Glu	Leu	Gly	Thr	Phe	Tyr	Arg	Ala	Gly	Arg	210	215	220	
Asp	Gly	Thr	Pro	Ala	Gly	Leu	Asp	Ala	Leu	Pro	Leu	Arg	Tyr	Ala	Asp	225	230	235	240
Phe	Ala	Ala	Tyr	Gln	Arg	Glu	Gln	Ala	Glu	Arg	Pro	Glu	Thr	Ala	Glu	245	250	255	
Arg	Ser	Thr	Arg	Trp	Ala	Arg	His	Leu	Arg	Gly	Ala	Pro	Ala	Thr	Leu	260	265	270	
Asp	Val	Leu	Gly	Pro	Pro	Pro	Ala	Glu	Pro	Ser	His	Ala	Pro	Ala	Gly	275	280	285	
Thr	Val	Arg	Thr	Asp	Leu	Pro	Ala	Ala	Leu	Val	Thr	Gly	Leu	Arg	Gln	290	295	300	
Leu	Gly	Gly	Arg	Ala	Arg	Thr	Thr	Leu	Phe	Pro	Leu	Leu	Leu	Ser	Ala	305	310	315	320
Phe	Gly	Leu	Ala	Leu	Ala	Gly	Pro	Pro	Gly	Pro	Tyr	Asp	Val	Met	Val	325	330	335	
Gly	Ile	Pro	Val	Ala	Gly	Arg	Pro	Arg	Thr	Glu	Leu	Glu	Pro	Leu	Ile	340	345	350	
Gly	Cys	Phe	Ala	Thr	Ile	Ala	Pro	Met	Arg	Leu	Thr	Ser	Asp	Gly	Thr	355	360	365	
Glu	Pro	Leu	Thr	Arg	Leu	Ala	Ala	Arg	Ala	Gln	Gln	His	Val	Gln	Asp	370	375	380	
Ala	Leu	Asp	Gly	Pro	Asp	Val	Pro	Phe	Glu	Arg	Leu	Val	His	Ala	Leu	385	390	395	400
Arg	Pro	Glu	Arg	Asp	Leu	Ala	Glu	Asn	Pro	Leu	Phe	Ser	Ala	Ser	Phe	405	410	415	
Ala	Phe	Gln	Asn	Thr	Pro	Arg	Thr	Ala	Val	Arg	Leu	Pro	Gly	Leu	Asp	420	425	430	
Ala	Glu	Val	Leu	Pro	Ser	Pro	Pro	Val	Ala	Pro	Lys	Phe	Pro	Leu	Ala	435	440	445	
Leu	Thr	Ala	Thr	Ala	Arg	Ala	Asp	Gly	Gly	Met	Gly	Leu	Glu	Leu	Glu	450	455	460	
Phe	Asp	Arg	Asp	Arg	Ile	Ala	Glu	Pro	Val	Ala	Arg	Gly	Ile	Leu	Thr	465	470	475	480
Ser	Phe	His	Ala	Ala	Leu	Ala	Arg	Ala	Val	Ala	Asp	Pro	Glu	Ala	Pro	485	490	495	

Ala Ala Pro Val Pro Ala Ala Ala Val Asp Arg Arg Pro Gly Arg Glu
 500 505 510
 Gly His Glu Cys Leu His Glu Pro Val Ala Arg Ala Ala Arg His
 515 520 525
 Pro Asp Ala Val Ala Val Ser Cys Gly Gly Thr Gln Leu Ser Tyr Gly
 530 535 540
 Ala Leu Asp Thr Arg Ala Glu Arg Leu Ala Ala Val Leu Arg Ala His
 545 550 555 560
 Gly Ala Gly Pro Glu Arg Leu Val Ala Leu Cys Leu Pro Thr Gly Pro
 565 570 575
 Glu Trp Val Val Gly Ala Leu Ala Ile Leu Lys Ser Gly Ala Ala Tyr
 580 585 590
 Leu Pro Leu Asp Pro Gly Asp Pro Ala Glu Arg Arg Ala Ser Val Ala
 595 600 605
 Ala Asp Ala Gly Ala Thr Leu Ile Val Ser Asp Thr Ala Leu Pro Pro
 610 615 620
 Leu His Arg Val Asp Val Thr Ala Thr Leu Pro Asp Gly Ala Pro Glu
 625 630 635 640
 Pro Thr Ala Arg Ala Val Leu Pro Gly Asn Leu Ala Tyr Ala Val Tyr
 645 650 655
 Thr Ser Gly Ser Thr Gly Gly Pro Lys Gly Val Leu Val Thr His Ala
 660 665 670
 Asn Val Thr Gly Leu Leu Ala Ala Cys Arg Glu Ala Leu Pro Ala Leu
 675 680 685
 Asp Ala Pro Arg Thr Trp Ser Ala Thr His Ser Pro Ala Phe Asp Phe
 690 695 700
 Ser Val Trp Glu Val Trp Gly Pro Leu Thr Ala Gly Gly Arg Leu Val
 705 710 715 720
 Leu Val Pro Pro Asp Val Ala Arg Ala Pro Asp Glu Leu Trp Asp Thr
 725 730 735
 Leu Arg Asp Glu Gln Val Glu Val Leu Ser Gln Thr Pro Ser Ala Phe
 740 745 750
 His His Leu Leu Pro Thr Ala Val Arg Arg Ala Ala Gln Ala Thr Ala
 755 760 765
 Leu Glu Leu Val Val Leu Gly Gly Glu Ala Cys Glu Pro Ala Arg Leu
 770 775 780
 Thr Pro Trp Trp Asp Ala Leu Gly Asp Arg Arg Pro Ala Val Val Asn
 785 790 795 800

Met	Tyr	Gly	Ile	Thr	Glu	Asn	Thr	Ile	His	Val	Thr	Val	Arg	Arg	Met	805	810	815
Thr	Ala	Ala	Asp	Arg	Ser	Gly	Ser	Pro	Val	Gly	Arg	Pro	Leu	Pro	Gly	820	825	830
Gln	Arg	Ala	Asp	Leu	Leu	Asp	Pro	His	Gly	Arg	Pro	Val	Ala	Pro	Gly	835	840	845
Gly	Arg	Gly	Glu	Leu	Phe	Val	Gly	Gly	Val	Gly	Leu	Ala	Arg	Gly	Tyr	850	855	860
Leu	Gly	Arg	Pro	Gly	Leu	Thr	Ala	Arg	Ser	Phe	Leu	Pro	Asp	Asp	Thr	865	870	875
Pro	Gly	Trp	Pro	Gly	Ala	Arg	Arg	Tyr	Arg	Ser	Gly	Asp	Leu	Ala	Arg	885	890	895
Leu	Leu	Pro	Asp	Gly	Gly	Leu	Asp	Tyr	Ala	Gly	Arg	Ser	Asp	Ala	Gln	900	905	910
Val	Lys	Val	Arg	Gly	Tyr	Arg	Val	Glu	Pro	Ala	Glu	Thr	Glu	Ala	Ala	915	920	925
Ala	Leu	Thr	His	Pro	Ala	Val	Arg	His	Cys	Val	Val	Val	Pro	Arg	Gly	930	935	940
Asp	Gly	Asp	Arg	Arg	His	Leu	Ala	Ala	Tyr	Val	Val	Ala	Asp	Thr	Arg	945	950	955
Ala	Cys	Asp	Gly	Pro	Gly	Leu	Arg	Thr	His	Leu	Ala	Glu	Arg	Leu	Pro	965	970	975
Arg	His	Leu	Val	Pro	Ala	Ser	Val	Val	Phe	Leu	Lys	Arg	Ile	Pro	Leu	980	985	990
Thr	Arg	Asn	Gly	Lys	Leu	Asp	Val	Ala	Ala	Leu	Pro	Asp	Pro	Ala	Ala	995	1000	1005
His	Arg	Ala	Pro	Ala	Arg	Glu	Arg	Pro	Arg	Thr	Ala	Thr	Glu	Arg	Thr	1010	1015	1020
Leu	Thr	Arg	Leu	Leu	Ala	Ala	Leu	Leu	Lys	Ala	Pro	Pro	Glu	Thr	Ile	1025	1030	1035
Gly	Thr	His	Asp	Asn	Leu	Phe	Asp	Leu	Gly	Gly	Asp	Ser	Leu	Thr	Val	1045	1050	1055
Thr	Gln	Phe	His	Ser	Arg	Val	Val	Glu	Glu	Phe	Ala	Val	Asp	Leu	Pro	1060	1065	1070
Val	Arg	Arg	Val	Tyr	Gln	Ala	Leu	Asp	Ile	Ala	Thr	Leu	Ala	Val	Thr	1075	1080	1085
Val	Asp	Asp	Phe	Arg	Arg	Arg	Ala	Glu	Arg	Thr	Ala	Val	Leu	Arg	Ala	1090	1095	1100

Leu Ala Ala Ala Glu Ala Met Glu Pro Gly Gly Thr Ala Gly Glu Ser
 1105 1110 1115 1120

Gly Gly Asn Pro Glu Glu Ser Ala Ala Thr Ala Arg Gly Pro Ala Val
 1125 1130 1135

Ala Ala Asn Glu Pro Gly Ala Ala Ala Arg Glu Ser Gly Ala Ala Pro
 1140 1145 1150

Val Glu Pro Ala Val Ala Val Gln Glu Ser Ala Ala Thr Lys Gly Glu
 1155 1160 1165

Pro Gly Thr Ala Ala Asn Glu Leu Gly Ala Glu Ala Arg Glu Pro Gly
 1170 1175 1180

Thr Ala Ala Gln Glu Pro Gly Thr Asp Pro Arg Pro Pro Ala Ala Thr
 1185 1190 1195 1200

Pro Gln Asp Pro Arg Thr Thr Pro Gln Glu Gly Gln Pro Cys Pro Arg
 1205 1210 1215

Pro Glu

<210> 101

<211> 2675

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF22

<400> 101

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Arg Thr Pro Ala Arg Pro Ala Tyr Ala Phe Leu Pro Asp Gly Glu Thr
 20 25 30

Glu Ser Val Arg Phe Ser Phe Ala Asp Ile Asp Arg Arg Ala Arg Ala
 35 40 45

Val Ala Ala Val Leu Gln Asp Arg Gly Leu Ala Gly Glu Arg Val Leu
 50 55 60

Val Ala Tyr Pro Ser Gly Pro Glu Tyr Val Gln Ala Phe Leu Gly Cys
 65 70 75 80

Leu Tyr Ala Gly Val Val Ala Val Pro Cys Asp Glu Pro Arg Ser Gly
 85 90 95

Pro Ser Ala Glu Arg Leu Ala Gly Ile Arg Ala Asp Ala Arg Pro Ala
 100 105 110

Leu Ala Leu Thr Ala Gly Ala Pro Glu Ala Gly Leu Ala Gly Leu Ala
 115 120 125

Thr	Leu	Asp	Val	Ala	Gly	Val	Pro	Asp	Ser	Ala	Ala	Gly	Ala	Trp	Thr	130	135	140
Asp	Pro	Val	Ala	Gly	Pro	Asp	Ala	Leu	Ala	Phe	Leu	Gln	Tyr	Thr	Ser	145	150	155
Gly	Ser	Thr	Arg	Arg	Pro	Arg	Gly	Val	Met	Val	Gly	His	Gly	Asn	Leu	165	170	175
Leu	Ala	Asn	Glu	Arg	Cys	Ile	Ala	Ala	Ala	Cys	Gly	His	Asp	Arg	Asp	180	185	190
Ser	Thr	Phe	Val	Gly	Trp	Ala	Pro	Phe	Phe	His	Asp	Met	Gly	Leu	Val	195	200	205
Ala	Asn	Leu	Leu	Gln	Pro	Leu	Tyr	Leu	Gly	Ser	Leu	Ser	Val	Leu	Met	210	215	220
Pro	Pro	Met	Ala	Phe	Leu	Gln	Arg	Pro	Ala	Arg	Trp	Leu	Arg	Ala	Val	225	230	235
Ser	Arg	Tyr	Arg	Ala	His	Thr	Ser	Gly	Gly	Pro	Asn	Phe	Ala	Tyr	Asp	245	250	255
Leu	Cys	Val	Asp	Arg	Val	Gly	Glu	Asp	Glu	Arg	Ala	Gly	Leu	Asp	Leu	260	265	270
Ser	Gly	Trp	Lys	Val	Ala	Tyr	Asn	Gly	Ala	Glu	Pro	Val	Arg	Ala	Asp	275	280	285
Thr	Leu	Arg	Arg	Phe	Thr	Asp	Arg	Phe	Ala	Pro	His	Gly	Phe	Thr	Pro	290	295	300
Gly	Ala	His	Phe	Pro	Thr	Tyr	Gly	Leu	Ala	Glu	Ala	Thr	Leu	Leu	Val	305	310	315
Ala	Thr	Gly	Pro	Lys	Gly	Val	Pro	Pro	Arg	Thr	Leu	Thr	Ala	Asp	Arg	325	330	335
Ala	Ala	Leu	Arg	Ala	Gly	Arg	Leu	Arg	Pro	Ala	Gly	Pro	Gly	Glu	Ala	340	345	350
Gly	Leu	Glu	Leu	Val	Gly	Asn	Gly	Thr	Ala	Gly	Leu	Asp	Thr	Thr	Leu	355	360	365
Arg	Ile	Val	Asp	Pro	Ala	Thr	Ala	Arg	Glu	Cys	Pro	Pro	Gly	Glu	Val	370	375	380
Gly	Glu	Val	Trp	Val	Arg	Gly	Pro	Gly	Val	Ala	Arg	Gly	Tyr	Phe	Gly	385	390	395
Arg	Pro	Arg	Glu	Ser	Ala	Pro	Leu	Leu	Ala	Ala	Arg	Leu	Pro	Gly	Gly	405	410	415
Glu	Gly	Pro	Tyr	Leu	Arg	Thr	Gly	Asp	Leu	Gly	Ala	Leu	His	Asp	Gly	420	425	430

Glu	Leu	Phe	Leu	Thr	Gly	Arg	His	Lys	Asp	Leu	Ile	Val	Ile	Arg	Gly	435	440	445	
Gln	Asn	His	His	Pro	His	Asp	Leu	Glu	Arg	Thr	Ala	Glu	Gln	Ala	His	450	455	460	
Pro	Ala	Leu	Arg	Pro	Thr	Cys	Ala	Ala	Ala	Phe	Ala	Val	Pro	Gly	Asp	465	470	475	480
Gly	Ala	Glu	Arg	Leu	Val	Leu	Val	Cys	Glu	Leu	Thr	Ser	Tyr	Arg	Ala	485	490	495	
Val	Asp	Pro	Ala	Ala	Val	Ala	Glu	Ala	Val	Arg	Ala	Ala	Leu	Ala	Ala	500	505	510	
Arg	His	Gly	Val	Ala	Pro	His	Thr	Leu	Val	Val	Leu	Arg	Arg	Gly	Gly	515	520	525	
Ile	Pro	Lys	Thr	Thr	Ser	Gly	Lys	Val	Arg	Arg	Gly	His	Cys	Arg	Thr	530	535	540	
Ala	Tyr	Leu	Asp	Gly	Thr	Leu	Pro	Val	His	Thr	Ala	Val	Arg	Leu	Pro	545	550	555	560
Ala	Gly	Glu	Glu	Gly	Thr	Glu	Ala	Leu	Pro	Leu	Thr	Thr	Asp	Pro	Gly	565	570	575	
Arg	Leu	Ala	Thr	Ala	Leu	Arg	Asp	Leu	Ala	Ala	Ala	His	Ala	Gly	Leu	580	585	590	
Ala	Gly	Pro	Leu	Pro	Gly	Thr	Asp	Glu	Pro	Val	Ser	Ala	Leu	Gly	Leu	595	600	605	
Asp	Ser	Leu	Ala	Ser	Leu	Arg	Leu	His	His	His	Val	Gln	Ser	Ala	Tyr	610	615	620	
Gly	Val	Thr	Leu	Pro	Val	Thr	Ala	Leu	Leu	Gly	Asp	Thr	Thr	Tyr	Arg	625	630	635	640
Arg	Leu	Ala	Glu	Leu	Thr	Leu	Ala	Ala	Pro	Arg	Pro	Ala	Arg	Ala	Pro	645	650	655	
Glu	Gly	Gln	Val	Thr	Gly	Val	Trp	Arg	Pro	Leu	Thr	His	Gly	Gln	Arg	660	665	670	
Ala	Leu	Trp	Tyr	Glu	Gln	Ala	Leu	Ala	Pro	His	Ala	Ala	Ala	Tyr	His	675	680	685	
Leu	Val	Arg	Ala	Leu	Ala	Leu	Arg	Gly	Pro	Val	Asp	Glu	Glu	Ala	Leu	690	695	700	
Ala	Glu	Ala	Val	Arg	Arg	Val	Val	Arg	Arg	His	Pro	Ala	Leu	Arg	Thr	705	710	715	720
Arg	Phe	Ala	Leu	Arg	Asp	Gly	Glu	Pro	Ala	Arg	Arg	Thr	Glu	Pro	Tyr	725	730	735	

Gly Pro Glu Leu Asp Val Arg Asp Ala Thr Gly Leu Pro Ala Asp Arg
 740 745 750
 Leu Arg Glu His Leu Ala Ala Ala Gly Asp Arg Pro Phe Asp Leu Ala
 755 760 765
 Ala Gly Asp Arg Pro Val Arg Leu Thr Leu Tyr Arg Thr Asp Gly Gly
 770 775 780
 His Ile Leu Leu Leu Val Ala His His Leu Val Ala Asp Phe Trp Ser
 785 790 795 800
 Leu Val Val Leu Leu Gly Asp Leu Ala Arg Ala His Ala Gly Glu Asp
 805 810 815
 Leu Pro Pro Ala Pro Glu Gly Asp Pro Gly Asp Glu Ala Thr Asp Ala
 820 825 830
 Asp Arg Thr Tyr Trp Arg His Arg Leu Ala Asp Ala Pro Pro Ala Leu
 835 840 845
 Asp Leu Pro Thr Asp Leu Pro His Pro Ala Glu Arg Gly Phe Ala Gly
 850 855 860
 Ala Thr His Ala Phe Arg Leu Pro Pro Asp Leu Thr Ala Arg Leu Thr
 865 870 875 880
 Ala Leu Ser Arg Glu Arg His Cys Thr Leu Phe Thr Thr Leu Leu Ala
 885 890 895
 Ala His Gln Leu Leu Leu His Arg Leu Thr Gly Gln Asp Asp Leu Val
 900 905 910
 Val Gly Thr Leu Leu Ala Arg Arg Asp Thr Ala Glu Ala Ala Gly Ala
 915 920 925
 Val Gly Tyr Leu Val Asn Pro Leu Pro Leu Arg Ser Val Arg Glu Pro
 930 935 940
 Gly Glu Thr Phe Thr Glu Leu Leu Arg Arg Thr Arg Arg Thr Val Leu
 945 950 955 960
 Asp Ala Val Ala His Gly Arg His Pro Phe Gly Pro Leu Val Ser Arg
 965 970 975
 Leu Ala Pro Ala Arg Thr Pro Gly Arg Ala Pro Leu Leu Gln Ser Leu
 980 985 990
 Phe Val Leu Gln Arg Glu Tyr Gly Asp Glu Ala Asp Gly Tyr Arg Ala
 995 1000 1005
 Leu Ala Leu Gly Val Gly Gly Arg Leu Arg Val Gly Gly Leu Asp Leu
 1010 1015 1020
 Glu Ala Leu Ala Leu Pro Arg Arg Trp Ser Gln Leu Asp Leu Ser Leu
 1025 1030 1035 1040

Ala Arg Glu Ala Val Thr Thr Val His Phe Val Pro Ser Met Leu Thr
 1345 1350 1355 1360
 Pro Phe Leu Thr Glu Leu Ala Arg Gly Thr Thr Arg Leu Pro Ala Leu
 1365 1370 1375
 Arg Arg Val Val Cys Ser Gly Glu Glu Leu Pro Ala Ala Ala Val Asn
 1380 1385 1390
 Arg Ala Ala Gly Leu Leu Asp Ala Arg Leu Tyr Asn Leu Tyr Gly Pro
 1395 1400 1405
 Thr Glu Ala Ala Val Asp Val Thr Ala Trp Pro Cys Arg Pro Pro Glu
 1410 1415 1420
 Pro Gly Pro Val Pro Ile Gly Leu Pro Ile Ala Asn Thr Thr Thr Glu
 1425 1430 1435 1440
 Val Leu Asp Gly Arg Leu Arg Pro Leu Pro Arg Pro Val Pro Gly Glu
 1445 1450 1455
 Leu Tyr Leu Gly Gly Ala Cys Leu Ala His Gly Tyr His His Asp Pro
 1460 1465 1470
 Ala Leu Thr Ala Ala Arg Phe Leu Pro Ala Pro Gly Gly Gly Arg Arg
 1475 1480 1485
 Tyr Arg Thr Gly Asp Leu Val Arg Gln Arg Ala Asp Gly Ala Leu Val
 1490 1495 1500
 Phe Arg Gly Arg Thr Asp Asp Gln Val Lys Ile Gly Gly Ile Arg Val
 1505 1510 1515 1520
 Glu Pro Gly Glu Val Ala Glu Ala Leu Arg Ala Leu Pro Gly Val Ala
 1525 1530 1535
 Asp Ala Ala Val Val Pro His Asp Gly Arg Leu Ala Ala Tyr Ala Val
 1540 1545 1550
 Ala Asp Pro Val Gly Pro Ala Pro Ala Ala Asp Ala Leu Arg Asp Ala
 1555 1560 1565
 Leu Arg Arg Arg Leu Pro Gly His Leu Val Pro Ala Ala Leu Thr Leu
 1570 1575 1580
 Leu Asp Arg Leu Pro Leu Thr Pro Ala Gly Lys Leu Asp Arg Arg Ala
 1585 1590 1595 1600
 Leu Pro His Pro Ser Ala Pro Pro Pro Asp Gly Gly Arg Pro Pro Thr
 1605 1610 1615
 Thr Gly Thr Glu Arg Leu Val Ala Arg Val Trp Ala Glu Arg Leu Gly
 1620 1625 1630
 Arg Glu Val Val Gly Val Asp Arg Asp Phe Phe Ser Leu Gly Gly Asp
 1635 1640 1645

Ser Val Arg Ala Leu Gly Val Thr Ala Ala Leu Arg Ala Ala Gly Leu
 1650 1655 1660
 Pro Val Thr Val Thr Asp Leu Leu Arg Leu Pro Thr Val Ala Ala Leu
 1665 1670 1675 1680
 Ala Arg His Ala Asp Glu Arg Ala Asp Arg Arg Pro Ala Arg Gln Glu
 1685 1690 1695
 Thr Pro Pro Gly Pro Phe Ala Leu Cys Pro Glu Ala Ala Gly Val Pro
 1700 1705 1710
 Gly Leu Glu Asp Ala Tyr Pro Met Ser Met Ala Gln Arg Ala Val Leu
 1715 1720 1725
 Phe His Arg Asp His Asn Pro Gly Tyr Glu Val Tyr Val Thr Ser Val
 1730 1735 1740
 Ala Val Ser Thr Pro Leu Asp Arg Thr Arg Leu Ala Ala Ala Val Asp
 1745 1750 1755 1760
 Arg Leu Leu Asp Arg His Ala Tyr Leu Arg Ser Ser Phe Asp Leu Val
 1765 1770 1775
 Ser His Pro Glu Pro Thr Gln Leu Val Trp Thr His Leu Pro Thr Pro
 1780 1785 1790
 Leu Glu Val Val Glu Ser Ser Asp Pro Ala Gly Phe Asp Ala Trp Leu
 1795 1800 1805
 His Ala Glu Arg Lys Arg Pro Leu Asp Val Gly Thr Gly Pro Leu Ala
 1810 1815 1820
 Arg Phe Thr Ala His Asp Ala Gly Ala Ala Gly Phe Arg Leu Thr Val
 1825 1830 1835 1840
 Ser Ser Phe Ala Leu Asp Gly Trp Cys Val Ala Thr Val Leu Thr Glu
 1845 1850 1855
 Leu Leu Arg Asp Tyr Trp Ser Ala Leu Arg Gly Ala Pro Leu Ser Leu
 1860 1865 1870
 Pro Ala Pro Ala Ala Ser Tyr Arg Glu Phe Val Ala Leu Glu Arg Ala
 1875 1880 1885
 Ala Gln His Asp Pro Ala His Arg Glu Phe Trp Arg Thr Glu Leu Ala
 1890 1895 1900
 Gly Ala Arg Pro His Pro Leu Pro Arg Arg Pro Val Pro Pro Pro Gly
 1905 1910 1915 1920
 Pro Asp Gly Ile Arg Gln His Arg His Val Val Pro Val Glu Asp Thr
 1925 1930 1935
 Val Ala Lys Gly Leu Ser Ala Leu Ala Gly Glu Leu Gly Val Gly Leu
 1940 1945 1950

Lys His Val Leu Leu Gly Val His Leu Arg Val Val Arg Ala Leu Ser
 1955 1960 1965
 Gly Asp Pro Asp Val Ile Thr Ala Val Glu Thr His Gly Arg Leu Glu
 1970 1975 1980
 Arg His Asp Gly Asp Arg Val Leu Gly Val Phe Asn Asn Ile Leu Pro
 1985 1990 1995 2000
 Leu Arg Gln Arg Val Asp Gly Gly Ser Trp Ala Asp Leu Ala Arg Ala
 2005 2010 2015
 Ala His Ala Ala Glu Ala Arg Thr Gly Glu Tyr Arg Arg Tyr Pro Leu
 2020 2025 2030
 Ala Gln Ala Gln Arg Asp His Gly Ala Ala Gly Leu Phe Asp Thr Leu
 2035 2040 2045
 Phe Val Phe Thr His Phe His Leu Tyr Arg Ala Leu Ala Asp Leu Asp
 2050 2055 2060
 Gly Met Ala Val Ser Asp Leu Arg Ala Pro Asp Gln Thr Tyr Val Pro
 2065 2070 2075 2080
 Leu Thr Ala His Phe Asn Val Asp Ala Thr Asp Gly Gly Gly Leu Arg
 2085 2090 2095
 Leu Leu Leu Glu Ser Asp Pro Arg Glu Phe Pro Asp Glu Gln Val Ala
 2100 2105 2110
 Glu Phe Ala Ala Tyr Tyr Arg Arg Ala Leu Arg Ala Ala Ala Asp Ala
 2115 2120 2125
 Pro His Arg Pro Tyr Arg Asp Thr Pro Leu Thr Asp Arg Pro Ala Gly
 2130 2135 2140
 Pro Ala Pro His Arg Ala Glu Arg Ser Val His Ala Leu Phe Ala Ala
 2145 2150 2155 2160
 Pro Ala Arg Asn His Pro Asp Arg Ile Ala Leu Asp Gly Glu Asp Gly
 2165 2170 2175
 Pro Val Ser His Gly Ala Leu Ala Arg Arg Ala Ala Arg Leu Ala Gly
 2180 2185 2190
 Thr Leu Arg Ala Ala Gly Ala Gly Pro Asp Thr Val Val Gly Ile Trp
 2195 2200 2205
 Ala Pro Arg Arg Ala Asp Ala Val Val Ala Leu Leu Ala Ala Leu His
 2210 2215 2220
 Ala Gly Ala Ala Tyr Leu Pro Leu Asp Pro Val His Pro Pro Arg Arg
 2225 2230 2235 2240
 Gln Arg Gln Val Leu Thr Glu Ala Gly Ala Arg Leu Leu Val Leu Pro
 2245 2250 2255

Ala Gly Leu Asp Thr Pro Leu Arg Ala Cys Gly Leu Pro Val Val Ala
 2260 2265 2270
 Pro Asp Asp Leu Gly Ala Pro Ile Ala Pro Val Ser Val His Pro Glu
 2275 2280 2285
 Gln Leu Ala Ala Val Met Ala Thr Ser Gly Ser Thr Gly Thr Pro Lys
 2290 2295 2300
 Thr Ile Gly Val Pro Gln Arg Ala Leu Ala Gly Tyr Leu Arg Trp Ala
 2305 2310 2315 2320
 Ile Gly His Tyr Arg Leu Asp Glu Glu Thr Val Ser Pro Val His Ser
 2325 2330 2335
 Ser Leu Gly Phe Asp Leu Thr Val Thr Ala Leu Leu Ala Pro Leu Ala
 2340 2345 2350
 Ala Gly Gly Gln Ala Arg Leu Thr Asp Ser Gly Asp Pro Gly Ala Leu
 2355 2360 2365
 Gly Ala Ala Leu Ala Ala Gly His His Thr Leu Leu Lys Ile Thr Pro
 2370 2375 2380
 Ala His Leu Ala Ala Leu Ala His Gln Leu Gly Ala Pro Thr Ala Leu
 2385 2390 2395 2400
 Arg Thr Val Val Ala Gly Gly Glu Pro Leu His Ala Gly His Val Arg
 2405 2410 2415
 Ala Leu Arg Ala Phe Ala Pro Gly Ala Arg Leu Val Asn Glu Tyr Gly
 2420 2425 2430
 Pro Thr Glu Thr Thr Val Gly Cys Cys Ala His Asp Val Ala Pro Asp
 2435 2440 2445
 Pro Gly Glu Ala Pro Ile Pro Val Gly Thr Pro Ile Ala Gly Leu Ser
 2450 2455 2460
 Ala Cys Val Val Asp Asp Ala Leu Pro Ala Pro Pro Gly Val Arg Gly
 2465 2470 2475 2480
 Glu Leu Tyr Ile Gly Gly Thr Gly Val Thr Arg Gly Tyr Leu Gly Arg
 2485 2490 2495
 Pro Ala Ala Thr Ala Ala Ala Tyr Val Pro Asp Pro Ala Ala Pro Gly
 2500 2505 2510
 Ala Arg Arg Tyr Arg Thr Gly Asp Leu Ala Arg Arg Leu Pro Asp Gly
 2515 2520 2525
 Thr Leu Leu Leu Ala Gly Arg Ala Asp Arg Gln Val Lys Ile Arg Gly
 2530 2535 2540
 His Arg Val Glu Pro Gly Glu Val Glu Gln Val Leu Gly Gly His Pro
 2545 2550 2555 2560

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<210> 102
<211> 645
<212> PRT
<213> Streptomyces verticillus
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<220>
<223> ORF21

<400> 102																
Met	Arg	Gly	His	Asp	Asp	Arg	Val	Gly	Arg	Leu	Ser	Ala	Asp	Trp	Ser	
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Val	Pro	Pro	Thr	Arg	Leu	Pro	Ala	Gly	Asp	Pro	Ala	Gly	Ser	Val	Gly	
			20					25					30			
Pro	Gly	Gly	Gly	Pro	Pro	Val	Pro	His	Glu	Glu	Val	Thr	Met	Ser	Glu	
		35					40					45				
Tyr	Asp	Asp	Arg	Leu	Ala	Arg	Leu	Ser	Asp	Asn	Gln	Arg	Ala	Leu	Leu	
	50					55				60						
Asp	Arg	Trp	Leu	Ala	Glu	Asp	Pro	Ala	Gly	Gly	Ala	Gly	Pro	Leu	Arg	
65					70					75					80	
Pro	Asp	Gly	Arg	Pro	Pro	Arg	Thr	Glu	Ala	Glu	Arg	Ile	Leu	Ala	Gly	
				85					90					95		
Val	Trp	Glu	Glu	Val	Leu	Glu	Thr	Gly	Gly	Ile	Gly	Ala	Asp	Asp	Asp	
			100					105					110			
Tyr	Phe	Ala	Leu	Gly	Gly	Asp	Ser	Val	His	Ala	Ile	Val	Ile	Val	Ala	
		115					120					125				

Lys Ala Arg Gln Ala Gly Leu Ala Leu Thr Ala His Asp Leu Phe Glu
 130 135 140
 Ala Arg Thr Leu Ala Ala Val Ala Arg Arg Ala Ala Pro Ala Gly Pro
 145 150 155 160
 Ala Glu Pro Val Pro Asp Ala Gly Gly Gly Ala Val Arg Tyr Pro Leu
 165 170 175
 Thr Pro Met Gln Gln Gly Met Leu Tyr His Ser Ala Gly Gly Ser Thr
 180 185 190
 Pro Gly Ala Tyr Val Val Gln Val Cys Cys Arg Leu Thr Gly Asp Leu
 195 200 205
 Asp Val Ala Ala Phe Arg Thr Ala Trp Gln Ala Val Leu Ser Ala Asn
 210 215 220
 Pro Ala Leu Ala Val Ser Phe His Trp Ser Asp Gly Ser Pro Pro Glu
 225 230 235 240
 Gln Val Val Asp Pro Asp Ala Arg Val Thr Val Asp Thr Ala Asp Trp
 245 250 255
 Arg Asp Arg Thr Pro Ala Glu Arg Asp Asp Ala Phe Ala Arg Phe Leu
 260 265 270
 Asp Thr Asp Arg Ala Ala Gly Phe Asp Leu Ala Arg Ala Pro Leu Met
 275 280 285
 Arg Leu Thr Leu Phe Arg Glu Gly Glu His Ala Tyr Arg Cys Val Trp
 290 295 300
 Thr His His His Leu Val Leu Asp Gly Trp Ser Gln Gln Leu Val Leu
 305 310 315 320
 Arg Asp Val Leu Asp Cys Tyr Met Arg Leu Arg Ala Gly Arg Gly Ala
 325 330 335
 Glu Pro Pro Ala Arg Pro Ser Phe Thr Gly His Leu Arg Arg Leu Glu
 340 345 350
 Arg Gln Asp Gly Ile Asp Glu Glu Phe Trp Arg Asp His Leu Gly Gly
 355 360 365
 Leu Pro Ala Pro Ser Arg Val Ala Gly Pro Gly Cys Arg Asp Gly Arg
 370 375 380
 Val Val Ala Val Arg Arg Ala Glu His Arg His Arg Val Ser Ala Ala
 385 390 395 400
 Thr Gly Arg Glu Leu Thr Gly Phe Cys Arg Arg His Gly Leu Thr Pro
 405 410 415
 Ala Ala Val Leu His Gly Gly Trp Ala Val Leu Leu Ser Leu His Cys
 420 425 430

Leu Val Arg Arg Leu Val Arg Asp Gly His Arg Val Arg Gly Val Asp
20 25 30

Leu Val Pro Pro Arg Tyr Gly Pro Gly Glu Ala Gln Glu Phe Val Ile
 35 40 45
 Ala Asp Leu Arg Asp Ala Ala Gln Ala Ala Arg Ala Val Ala Gly Ala
 50 55 60
 Asp Ser Val Phe Ala Leu Ala Ala Asn Met Gly Gly Ile Gly Trp Thr
 65 70 75 80
 His Thr Ala Pro Ala Glu Ile Leu His Asp Asn Leu Leu Ile Ser Thr
 85 90 95
 His Thr Ile Glu Ala Cys Arg Ala Ala Gly Val Arg Thr Thr Val Tyr
 100 105 110
 Thr Ser Ser Ala Cys Val Tyr Pro Ala Ser Leu Gln Arg Glu Pro Asp
 115 120 125
 Ala Ala Pro Leu Ala Glu Asp Pro Val Phe Pro Ala Glu Pro Asp Met
 130 135 140
 Glu Tyr Gly Trp Glu Lys Leu Thr Thr Glu Ile Leu Cys Gly Ala Tyr
 145 150 155 160
 Arg Arg Ser His Gly Met Asp Ile Lys Thr Ala Arg Leu His Ala Ile
 165 170 175
 Tyr Gly Pro Leu Gly Thr Tyr Thr Gly Pro Arg Ala Lys Ser Leu Ser
 180 185 190
 Met Leu Cys Asp Lys Val Ala Arg Ile Pro Gly Asp Glu Gly Glu Ile
 195 200 205
 Glu Val Trp Gly Asp Gly Thr Gln Thr Arg Ser Tyr Cys Tyr Val Asp
 210 215 220
 Asp Cys Val Glu Gly Leu Ile Arg Leu Ala Arg Ser Asp Val Ala Glu
 225 230 235 240
 Pro Val Asn Ile Gly Ser Glu Glu Arg Val Asp Ile Ala Ser Leu Val
 245 250 255
 Glu Arg Ile Ala Gly Val Ala Gly Lys Lys Val Arg Cys Ala Phe Ala
 260 265 270
 Pro Asp Arg Pro Val Gly Pro Arg Gly Arg Val Ser Asp Asn Thr Arg
 275 280 285
 Cys Arg Glu Leu Leu Gly Trp Ala Pro Glu Thr Ser Leu Ala Ala Gly
 290 295 300
 Leu Glu Arg Thr Tyr Pro Trp Ile Glu Arg Gln Val Leu Ala Glu Ala
 305 310 315 320
 Gly Arg Ala Asp Ala
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<210> 104

<211> 494

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF19

<400> 104

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Met Lys Asp Leu Gly Arg Leu Leu Leu Gly His Ala Ala Arg Phe Arg
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Gly Arg Glu Leu Gln Asp Val Ala Thr Arg Ala Leu Arg Ala Ser Gly
          20           25           30

Gly Glu Asn Ala Trp Val Val Ser Val Val Asn Thr Ser Leu Arg Ala
          35           40           45

Arg Gln Ala Val Asp His Ala Leu Arg Leu Ala Pro Arg Arg Gly Leu
          50           55           60

Ser Arg Leu Arg Tyr Pro Phe Ser Ala Ala His His Thr Ala Thr Pro
          65           70           75           80

Pro Arg Thr Leu Ser Leu Leu Cys Pro Thr Arg Glu Arg Val Gly Asn
          85           90           95

Val Glu Arg Phe Leu Asp Ser Val Ala Arg Thr Ala Ala Ala Pro Gly
          100          105          110

Arg Ile Glu Ala Leu Phe Tyr Val Asp Asp Asp Asp Pro Gln Leu Pro
          115          120          125

Ala Tyr His Glu Leu Phe Glu His Ala Arg Trp Arg Tyr Gly Arg Ile
          130          135          140

Gly Arg Cys Ala Leu His Val Gly Ala Pro Val Gly Val Pro His Ala
          145          150          155          160

Trp Asn His Leu Ala Arg Asn Ala Ala Gly Asp Val Leu Met Met Ala
          165          170          175

Asn Asp Asp Gln Leu Tyr Ile Asp Tyr Gly Trp Asp Thr Ala Leu Asp
          180          185          190

Ala Arg Val Thr Glu Leu Ser Ala Leu His Pro Asp Gly Val Leu Cys
          195          200          205

Leu Tyr Phe Asp Asp Gly Gln Tyr Pro Glu Gly Gly Cys Asp Phe Pro
          210          215          220

Met Val Thr Arg Pro Trp Tyr Gly Thr Leu Gly Tyr Phe Thr Pro Thr
          225          230          235          240

Ile Phe Gln Gln Trp Glu Val Glu Lys Trp Val Phe Asp Ile Ala Asp
          245          250          255

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Arg Leu His Arg Leu Tyr Pro Val Pro Gly Val Leu Val Glu His Arg
 260 265 270
 His Tyr Gln Asp Tyr Lys Ala Pro Phe Asp Ala Thr Tyr Gln Arg His
 275 280 285
 Arg Met Thr Arg Glu Lys Ser Phe Ala Asp His Ala Leu Phe Leu Arg
 290 295 300
 Thr Glu Pro Asp Arg Glu Ala Glu Thr Asp Arg Leu Arg Ala Val Ile
 305 310 315 320
 Ala Arg Ala Gly Asn Thr Pro Asp Ala Asp His Ala Asp His Ala Val
 325 330 335
 His Asp Ala Glu Thr Phe Trp Phe Thr Gly Leu Leu Arg Glu Ser His
 340 345 350
 Ala Lys Leu Leu Ala Glu Leu Asp Asp Ala Pro Gly Pro Ala Ala Gly
 355 360 365
 Ala Val Leu Phe Ala Asp Gly Ser Trp Thr Gly Val Ala Tyr Arg Thr
 370 375 380
 His Pro Leu Ala Thr Ala Leu Leu Ala Ser Ile Pro Glu Ala Thr Leu
 385 390 395 400
 Asp Ser Gly Arg Ala Asp Leu Leu Val Val Pro Pro Gly Ala Ser His
 405 410 415
 His His Pro Asp Gly Thr Val Asp Ser Ala Phe Gly Ser Asp Ala Gly
 420 425 430
 Leu Arg Val Leu Phe Gly Leu Arg Val Pro Asp Ala Ala Gln Leu Arg
 435 440 445
 Val Gly Asp Gly Pro Val Pro Trp Gly Asn Gly Gln Cys Leu Ile His
 450 455 460
 Asp Thr Ala Ala Pro Ser Thr Leu Arg Asn Asp Gly Thr Glu Ser Leu
 465 470 475 480
 Ala Ala Leu Thr Phe Val Val Pro Arg Pro Ala Pro Gly Glu
 485 490

<210> 105

<211> 638

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF18

<400> 105

Met Arg Pro Val Cys Gly Ile Val Ala Ile Arg Ser Ala Asp Gly Gly
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Leu Asp Gly Gly Glu Leu Thr Ala Pro Met Ala Asp Leu Arg Pro Arg
 20 25 30
 Gly Pro Asp Gly Glu Gly Thr Trp Val Ser Pro Thr Gly Arg Ala Ala
 35 40 45
 Leu Gly His Thr Arg Leu Ala Val Ile Ala Pro Asp Ala Gly Arg Gln
 50 55 60
 Pro Val Ala Gly Pro Asp Gly Thr Val Arg Leu Val Val Asn Gly Glu
 65 70 75 80
 Phe Tyr Gly Tyr Arg Glu Ile Arg Ala Glu Leu Arg Ala Ala Gly Cys
 85 90 95
 Arg Phe Arg Thr Gly Ser Asp Ser Glu Ile Ala Leu His Leu Tyr Leu
 100 105 110
 Arg Asp Gly Arg Arg Ala Leu Glu Arg Leu Arg Gly Glu Phe Ala Phe
 115 120 125
 Val Leu Trp Asp Glu Arg Arg Ala Thr Leu Phe Ala Ala Arg Asp Arg
 130 135 140
 Phe Gly Val Lys Pro Leu Tyr Tyr Thr Glu Arg Asp Gly Arg Leu Tyr
 145 150 155 160
 Val Ala Ser Thr Val Arg Ala Leu Leu Ser Cys Gly Ala Pro Ala Arg
 165 170 175
 Trp Asp Thr Ala Ala Phe Ala Ala His Leu Gln Leu Gly Leu Pro Pro
 180 185 190
 Asp Arg Thr Leu Phe Ala Gly Ile Arg Gln Leu Pro Pro Gly Cys His
 195 200 205
 Leu Ile Ala Asp Ala His Gly Thr Arg Val Thr Pro Tyr Trp Asp Leu
 210 215 220
 Asp Tyr Pro Pro Ala Gly Glu Leu Ala Ala Arg Gly Ser Leu Asp Asp
 225 230 235 240
 His Leu Asp Ala Val Arg Glu Arg Thr Asp Glu Ala Val Arg Leu Arg
 245 250 255
 Thr Val Ala Asp Val Pro Leu Ala Cys His Leu Ser Gly Gly Leu Asp
 260 265 270
 Ser Ser Ala Val Ala Ala Ser Ala Ala Arg His Thr Arg Leu Thr Ala
 275 280 285
 Phe Thr Val Arg Phe Asp Asp Pro Ala Phe Asp Glu Ser Ala Val Ala
 290 295 300
 Arg Arg Thr Ala Ala His Leu Ala Ile Asp His Arg Glu Val Ala Ser
 305 310 315 320

Glu	Arg	Ala	His	Phe	Ala	Asp	His	Leu	Arg	Asp	Val	Val	Arg	Ala	Gly	325	330	335	
Glu	Met	Val	Gln	Glu	Asn	Ser	His	Gly	Ile	Ala	Arg	Tyr	Leu	His	Ser	340	345	350	
Ala	His	Ile	Lys	Lys	Ala	Gly	Phe	Thr	Ala	Val	Leu	Ala	Gly	Glu	Gly	355	360	365	
Gly	Asp	Glu	Leu	Phe	Leu	Gly	Tyr	Pro	Gln	Phe	Arg	Lys	Asp	Leu	Thr	370	375	380	
Leu	Ser	Leu	Ser	Ala	Asp	Ala	Arg	Asp	Lys	Ala	Asp	Arg	Gly	Tyr	Ala	385	390	395	400
Arg	Leu	Val	Ala	Ala	Gly	Leu	Leu	Pro	Pro	Tyr	Leu	Arg	Thr	Leu	Leu	405	410	415	
Gly	Thr	Leu	Gly	Phe	Leu	Pro	Ser	Trp	Ile	Val	Asp	Arg	His	Leu	Ala	420	425	430	
Val	Thr	Gln	Pro	Val	Ala	Ala	Leu	Leu	Arg	Pro	Asp	Phe	Ala	Ala	Glu	435	440	445	
Leu	Ala	Arg	Ala	Asp	Ala	Ala	Ala	Pro	Leu	Leu	Ala	Ala	Gly	Ala	Gly	450	455	460	
Leu	Leu	Ala	Gly	Arg	Ala	Pro	Ala	His	Gln	Ala	Thr	Tyr	Leu	Phe	Ala	465	470	475	480
Lys	Thr	Trp	Leu	Pro	Gly	Tyr	Leu	Leu	Ala	Ala	Glu	Arg	Leu	Asp	Ala	485	490	495	
Ala	Gln	Ala	Val	Glu	Val	Arg	Leu	Pro	Leu	Phe	Asp	His	His	Leu	Phe	500	505	510	
Asp	Leu	Val	Arg	His	Thr	Pro	Pro	Ala	Trp	Tyr	Asp	Lys	Asp	Gly	Thr	515	520	525	
Gly	Lys	Tyr	Pro	Leu	Arg	Ala	Ala	Met	Arg	His	Arg	Leu	Pro	Arg	Glu	530	535	540	
Val	Thr	Glu	Gly	Arg	Lys	Gln	Gly	Phe	Leu	Ala	Pro	Pro	Met	Ala	Asp	545	550	555	560
Asp	Asp	Thr	Leu	Leu	Asp	Ala	Leu	Arg	Glu	Arg	Leu	Ala	Gly	Pro	Gly	565	570	575	
Ala	Gly	Asp	Asp	Pro	Phe	Phe	Asp	Pro	His	Ala	Val	Arg	Ala	Leu	Leu	580	585	590	
Asp	Arg	Leu	Ala	Ala	Ala	Pro	Pro	Gly	Gln	Arg	Ser	Gly	Gly	Glu	Lys	595	600	605	
Leu	Leu	Gln	Leu	Val	Ala	Ser	Thr	Ala	Glu	Leu	Ala	Asp	Glu	Phe	Gly	610	615	620	

Leu Thr Thr Ala Pro Ser Gly Gln Lys Gly Gly Asn Gly Gly
 625 630 635

<210> 106

<211> 2626

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF17

<400> 106

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Ala Thr Ala Ala Pro Ala Ser Tyr Gly Gln Glu Arg Leu Trp Leu Leu
 20 25 30

Thr Gly Leu Leu Pro Thr Ala Tyr Asn Tyr Ala Thr Ala Leu Arg Leu
 35 40 45

Arg Gly Asp Leu Ser Val Pro Ala Leu Arg Gly Ala Leu Arg Gly Ile
 50 55 60

Val Arg Arg His Glu Val Leu Arg Thr Thr Phe Arg Leu Asp Gly Asp
 65 70 75 80

Asp Leu Ile Gln Val Val His Pro Thr Ala Asp Val Pro Val Arg Leu
 85 90 95

Ala Asp Leu Thr Gly Arg Ser Ala Asp Thr Gly Arg Leu Met Arg Glu
 100 105 110

Glu Ala Arg Arg Pro Phe Asp Leu Glu His Gly Pro Leu Leu Arg Leu
 115 120 125

Thr Leu Phe Arg Leu Gly Pro Arg Asp His Leu Ala Leu Leu Ala Val
 130 135 140

His His Ala Val Thr Asp Gly Trp Ser Asn Gly Val Leu Val Thr Glu
 145 150 155 160

Leu Ala Thr Gly Tyr Arg Glu Leu Arg Ala Gly Arg Pro Asp Arg Arg
 165 170 175

Pro Ala Pro Pro Val Gln Tyr Gly Asp Tyr Ala His Trp Gln Arg Glu
 180 185 190

Arg Leu Thr Gly Pro Glu Leu Arg Ala Leu Glu Asp Tyr Trp Arg Thr
 195 200 205

Ala Val Arg Asp Leu Pro Arg Thr Asp Leu Pro Thr Asp Arg Pro Arg
 210 215 220

Pro Ala Ala Arg Arg Gly Glu Gly Ala Asn His Ala Leu Leu Leu Ser
 225 230 235 240

Pro	Glu	Leu	Thr	Gly 245	Arg	Leu	Ala	Asp	Leu	Arg	Arg	Arg	Glu	Gly 255	Gly
Ser	Leu	Phe	Met 260	Leu	Val	Leu	Ser	Ala 265	Leu	Leu	Val	Val	Leu	Arg	Gly
Thr	Gly	Gly 275	Arg	Asp	Arg	Leu	Ala 280	Val	Gly	Thr	Leu	Val 285	Ala	Gly	Arg
Thr	Arg 290	Pro	Glu	Leu	Glu	Pro 295	Leu	Ile	Gly	Tyr	Phe 300	Val	Asn	Val	Leu
Leu 305	Leu	Pro	Phe	Glu	Thr 310	Gly	Gly	Arg	Thr	Ser 315	Phe	Ala	Glu	Leu	Trp 320
Arg	Arg	Val	Arg	Gly 325	Arg	Leu	Val	Glu	Ala 330	Tyr	Ala	His	Gln	Glu 335	Leu
Pro	Leu	Glu 340	Lys	Ala	Leu	Glu	Leu 345	Leu	Arg	Ala	Asp	Gly	Thr 350	Ala	Pro
Ala	Asp 355	Pro	Pro	Val	Gly	Val	Val 360	Cys	Val	Ala	Gln	Gln 365	Pro	Ala	Pro
Ala 370	Ile	Thr	Leu	Pro	Gly	Leu 375	Asp	Ala	Ser	Val	Glu 380	Asp	Val	Asp	Leu
Gly 385	Thr	Ala	Gln	Phe	Asp 390	Leu	Val	Val	Glu	Val 395	Arg	Glu	Arg	Pro	Glu 400
Gly	Val	Gln	Ile	Ala 405	Phe	Gln	Tyr	Asp	Arg 410	Asp	Leu	Phe	Asp	Ala 415	Ala
Thr	Val	Arg	Leu 420	Leu	Ala	Asp	His 425	Val	His	Ala	Val	Leu	Asp 430	Gln	Ala
Ala	Ala 435	Asp	Pro	Thr	Leu	Pro	Cys 440	Ala	Glu	Leu	Pro	Ala 445	Pro	Pro	Ala
Pro 450	Ala	Ala	Pro	Ala	Arg	Thr 455	Ala	Gly	Ala	Thr	Thr 460	Leu	His	Ala	Leu
Phe 465	Glu	Ser	Arg	Ala	Ala 470	Lys	Ser	Pro	Asp	Ala 475	Val	Ala	Leu	Val	Asp 480
Gly	Gly	His	Arg	Val 485	Thr	Tyr	Arg	Thr	Leu 490	Asn	Thr	Arg	Ala	Asn 495	Arg
Leu	Ala	Arg	His 500	Leu	Arg	Ala	Val	Gly 505	Val	Arg	Thr	Glu	Asp 510	Arg	Val
Ala	Leu 515	Arg	Leu	Pro	Arg	Gly	Thr 520	Asp	Ala	Val	Thr	Ala 525	Thr	Leu	Ala
Ala 530	Leu	Lys	Ala	Gly	Ala	Ala 535	Tyr	Val	Pro	Leu	Asp 540	Pro	Ala	Leu	Pro

Glu	Glu	Arg	Leu	Thr	Arg	Val	Leu	Ala	Asp	Ala	Arg	Pro	Ala	Val	Val	545	550	555	560
Leu	Thr	Pro	Ala	Tyr	Leu	His	Asp	Arg	Ser	Ala	Glu	Ile	Thr	Ala	His	565	570	575	
Ala	Gly	His	Asp	Leu	Asn	Leu	Pro	Val	His	Pro	Asp	Asn	Leu	Ala	Tyr	580	585	590	
Leu	Leu	His	Thr	Ser	Gly	Ser	Thr	Gly	Thr	Pro	Lys	Gly	Val	Leu	Gly	595	600	605	
Thr	His	Arg	Gly	Ala	Val	Asn	Arg	Val	Asp	Trp	Met	Ser	Thr	Ala	Tyr	610	615	620	
Pro	Phe	Arg	Thr	Gly	Asp	Val	Ala	Val	Ala	Arg	Thr	Ala	Pro	Gly	Phe	625	630	635	640
Val	Asp	Ala	Val	Trp	Glu	Leu	Phe	Gly	Pro	Leu	Ala	Ala	Gly	Val	Pro	645	650	655	
Leu	Val	Leu	Leu	Pro	Thr	Asp	Glu	Ala	Arg	Asp	Pro	Ala	Leu	Leu	Thr	660	665	670	
Ala	Ala	Leu	Glu	Arg	His	Arg	Val	Ser	Arg	Met	Val	Thr	Val	Pro	Ser	675	680	685	
Leu	Leu	Thr	Met	Leu	Leu	Asp	Glu	Ser	Ala	Arg	Ala	Thr	Asp	Leu	Gly	690	695	700	
Thr	Arg	Leu	Ala	Cys	Leu	Arg	Thr	Trp	Ile	Thr	Ser	Gly	Glu	Pro	Leu	705	710	715	720
Pro	Pro	Ala	Leu	Ala	Arg	Arg	Phe	His	Asp	Arg	Leu	Pro	Gly	Arg	Thr	725	730	735	
Leu	Leu	Asn	Leu	Tyr	Gly	Ser	Ser	Glu	Thr	Ala	Ala	Asp	Ala	Thr	Ala	740	745	750	
Ala	Arg	Ile	Asp	Pro	Ala	Pro	Gly	Thr	Ala	Leu	Pro	Glu	Arg	Ser	Pro	755	760	765	
Ile	Gly	Thr	Pro	Ile	Thr	Gly	Val	Ser	Ala	Leu	Val	Arg	Gly	Pro	Asp	770	775	780	
Leu	Arg	Pro	Leu	Pro	Ala	Leu	Met	Pro	Gly	Glu	Leu	Tyr	Ala	Gly	Gly	785	790	795	800
Ala	Cys	Val	Ala	Arg	Gly	Tyr	His	Ala	Arg	Pro	Ala	Glu	Thr	Ala	Ala	805	810	815	
Ala	Phe	Pro	Pro	Asp	Pro	Asp	Gly	Gly	Pro	Gly	Ala	Arg	Met	Phe	Arg	820	825	830	
Thr	Gly	Asp	Arg	Ala	Arg	Leu	Arg	Ala	Asp	Gly	Arg	Leu	Glu	Leu	Leu	835	840	845	

Gly	Arg	Val	Asp	Arg	Gln	Val	Gln	Ile	Arg	Gly	Gln	Arg	Ala	Glu	Pro	850	855	860	
Gly	Glu	Val	Glu	His	Ala	Leu	Leu	Ala	His	Pro	Ala	Val	Arg	Ala	Ala	865	870	875	880
Ala	Val	Thr	Ala	Asn	Pro	Asp	Ala	Thr	Gly	Leu	Trp	Ala	Tyr	Val	Arg	885	890	895	
Leu	Ala	Pro	Gly	Pro	Phe	Ala	Ala	Gly	Ser	Pro	Gln	Thr	Glu	Leu	Thr	900	905	910	
Ala	Phe	Leu	Arg	Arg	Thr	Leu	Pro	Ala	His	Leu	Val	Pro	Thr	Ala	Val	915	920	925	
Thr	Val	Leu	Asp	Glu	Leu	Pro	Val	Thr	Ala	His	Gly	Lys	Thr	Asp	His	930	935	940	
Ala	Arg	Leu	Pro	Ala	Pro	Asp	Pro	Arg	Ala	Gly	Arg	Pro	Ala	Pro	Thr	945	950	955	960
Ala	Pro	Arg	Thr	Pro	Thr	Glu	Arg	Thr	Val	Ala	Asp	Val	Phe	Ala	Gly	965	970	975	
Val	Leu	Gly	Leu	Glu	Gly	Pro	Val	Gly	Ala	His	Asp	Asp	Phe	Phe	Leu	980	985	990	
Leu	Gly	Gly	His	Ser	Leu	Leu	Ala	Ala	Arg	Ser	Arg	Gly	Gly	Thr	Pro	995	1000	1005	
Arg	Pro	Pro	Arg	Arg	Pro	Asp	Arg	Ala	Glu	Arg	Arg	Leu	Arg	Gly	Pro	1010	1015	1020	
His	Arg	Arg	Arg	Ser	Val	Ala	Ala	Arg	Thr	Asp	Ala	Ala	Arg	Pro	Gly	1025	1030	1035	1040
Thr	Gly	Pro	Glu	His	Thr	Pro	Phe	Val	Thr	Asp	Pro	Gly	Ala	Arg	His	1045	1050	1055	
Glu	Pro	Phe	Pro	Leu	Thr	Asp	Val	Gln	Arg	Ala	Tyr	Tyr	Val	Gly	Arg	1060	1065	1070	
Glu	Gly	Gly	Phe	Ala	Leu	Gly	Gly	Val	Ser	Thr	His	Ala	Tyr	Leu	Glu	1075	1080	1085	
Ile	Glu	Ala	Pro	Arg	Ile	Asp	Val	Ala	Arg	Phe	Thr	Gly	Ala	Leu	Arg	1090	1095	1100	
Gly	Val	Ile	Ala	Arg	His	Pro	Met	Leu	Arg	Ala	Val	Ile	Arg	Pro	Asp	1105	1110	1115	1120
Gly	Leu	Gln	Gln	Val	Leu	Thr	Asp	Val	Pro	Pro	Tyr	Asp	Val	Ala	Val	1125	1130	1135	
His	Asp	Leu	Arg	Asp	Leu	Asp	Glu	Pro	Ala	Arg	Gln	Arg	Arg	Arg	Ala	1140	1145	1150	

Ala Leu Arg Glu Glu Met Ser His Gln Val Val Pro Ala Asp Leu Trp
 1155 1160 1165
 Pro Leu Phe Asp Val Arg Val Ser Leu Gly Pro Thr Asp Ala Leu Val
 1170 1175 1180
 His Val Gly Val Asp Ala Leu Ile Cys Asp Ala His Ser Phe Gly Leu
 1185 1190 1195 1200
 Val Leu Ala Glu Leu Ala Ala Arg Tyr Ala Asp Pro Ala Arg Arg Phe
 1205 1210 1215
 Pro Pro Leu Thr Ala Asp Phe Arg Asp His Val Leu His Gln Glu Ala
 1220 1225 1230
 Leu Arg Gly Thr Ala Glu Tyr Ala Ala Ala Glu Arg Tyr Trp Arg Glu
 1235 1240 1245
 Arg Leu Pro Glu Leu Pro Pro Gly Pro Glu Leu Pro Leu Ala Val Ala
 1250 1255 1260
 Pro Glu Thr Leu Gly Thr Pro Arg Phe Thr Arg Arg Ser Gly Arg Leu
 1265 1270 1275 1280
 Asp Ala Ala Ser Trp Thr Ala Val Lys Asp Arg Ala Arg Arg Ala Gly
 1285 1290 1295
 Leu Ser Pro Ser Gly Val Leu Leu Ala Ala Phe Ala Glu Val Ile Thr
 1300 1305 1310
 Ala Trp Ser Gly Arg Pro Arg Tyr Ser Leu Met Leu Thr Val Phe Asp
 1315 1320 1325
 Arg Pro Pro Leu His Pro Asp Leu Gly Arg Ile Val Gly Asp Phe Thr
 1330 1335 1340
 Ser Leu Ser Leu Leu Glu Val Asp His Ser Arg Pro Gly Asp Phe Thr
 1345 1350 1355 1360
 Asp Arg Ala Arg Ala Leu Gln Arg Arg Leu Trp Gln Asp Leu Asp His
 1365 1370 1375
 Leu Ala Val Gly Gly Val Thr Val Thr Arg Glu Arg Ala Leu Arg His
 1380 1385 1390
 Asp Ala Arg Pro Gly Leu Leu Thr Pro Val Val Phe Thr Ser Asp Leu
 1395 1400 1405
 Pro Val Gly Glu Thr Ala Ala Glu Asp Ala Asp Gly Gly Glu Gly Trp
 1410 1415 1420
 Ala Leu Gly Glu Pro Val Tyr Gly Val Ser Gln Thr Pro Gln Val His
 1425 1430 1435 1440
 Leu Asp His Gln Val Ala Glu Asp Arg Gly Glu Leu Val Phe Asn Trp
 1445 1450 1455

Asp Ala Val Glu Asp Leu Phe Ala Pro Gly Ala Leu Asp Ala Met Phe
 1460 1465 1470
 Ala Ala Tyr Thr Ala Ser Leu Thr Arg Leu Ala Arg Ser Pro Glu Ala
 1475 1480 1485
 Trp Arg Arg Pro Gly Thr Pro Pro Leu Pro Thr Ala Gln Ala Ala Val
 1490 1495 1500
 Arg Arg Arg Thr Ala Ala Thr Glu Ala Pro Leu Pro Ala Arg Leu Leu
 1505 1510 1515 1520
 His Glu Ala Val Gly Asp Ala Ala Arg Arg His Ala Asp Leu Thr Ala
 1525 1530 1535
 Leu Val Asp Gly Asp Thr Arg Met Thr Tyr Arg Arg Leu Thr Glu His
 1540 1545 1550
 Ala Arg Arg Val Gly Arg Thr Leu Arg Arg Leu Gly Ala Arg Pro Gly
 1555 1560 1565
 Arg Leu Val Pro Val Val Ala Arg Lys Gly Trp Arg Gln Ala Val Ala
 1570 1575 1580
 Ala Leu Gly Val Leu Glu Ser Gly Ala Ala Tyr Leu Pro Leu Asp Pro
 1585 1590 1595 1600
 Glu Leu Pro Ala Glu Arg Leu Val His Leu Val Arg Arg Ala Glu Ala
 1605 1610 1615
 Ala Leu Leu Leu Thr Glu Arg Ala Leu Leu Asp Thr Leu Ala Val Pro
 1620 1625 1630
 Val Gly Val Thr Val Leu Ala Val Asp Asp Asp Ala Ala Leu Asp Ala
 1635 1640 1645
 Asp Gly Gly Pro Leu Gln Ser Val Gln Asn Leu Thr Asp Leu Ala Tyr
 1650 1655 1660
 Thr Ile Phe Thr Ser Gly Ser Thr Gly Glu Pro Lys Gly Val Met Ile
 1665 1670 1675 1680
 Asp His Leu Gly Ala Ala Asn Thr Leu Glu Cys Val Asn Arg Arg Phe
 1685 1690 1695
 Gly Thr Gly Pro Gly Asp Ala Val Leu Ala Val Ser Ser Pro Ser Phe
 1700 1705 1710
 Asp Leu Ala Val Tyr Asp Leu Phe Gly Val Leu Ala Ala Gly Gly Thr
 1715 1720 1725
 Val Val Val Pro Ala His Asp Arg Arg Arg Asp Pro Gly His Trp Ala
 1730 1735 1740
 Glu Leu Ile Arg Arg Glu Arg Val Thr Leu Trp Asn Ser Val Pro Ala
 1745 1750 1755 1760

Leu Gly Thr Leu Leu Thr Glu Tyr Ala Glu Ala Leu Ala Pro Asp Ala
 1765 1770 1775
 Leu Arg Thr Leu Arg Ala Val Leu Leu Ser Gly Asp Trp Ile Pro Leu
 1780 1785 1790
 Gly Leu Pro Asp Arg Ile Arg Ala Leu Ser Ala Pro Gly Ala Thr Val
 1795 1800 1805
 Met Ser Leu Gly Gly Ala Thr Glu Ala Ser Ile Trp Ser Val Trp Tyr
 1810 1815 1820
 Glu Ile Gly Lys Val His Glu Ala Trp Ser Ser Ile Pro Tyr Gly Thr
 1825 1830 1835 1840
 Pro Met Ala Asn Gln Arg Leu Glu Val Leu Asp Glu Gln Leu Arg Pro
 1845 1850 1855
 Arg Pro Asp Trp Val Pro Gly Glu Leu Tyr Ile Gly Gly Thr Gly Val
 1860 1865 1870
 Ala Lys Gly Tyr Trp Arg Asp Pro Glu Gln Thr Ser Leu Arg Phe Pro
 1875 1880 1885
 Val His Pro Gly Ser Gly Gln Arg Leu Tyr Arg Thr Gly Asp Phe Ala
 1890 1895 1900
 Arg His Leu Pro Asp Gly Thr Leu Glu Phe Leu Gly Arg Gln Asp Asp
 1905 1910 1915 1920
 Gln Val Lys Ile Gly Gly Phe Arg Val Glu Leu Gly Glu Val Glu Ala
 1925 1930 1935
 Ala Leu Gly Arg Leu Pro Asp Val Ala Ala Gly Ala Val Ile Ala Thr
 1940 1945 1950
 Gly Asp Pro Arg Gly Asp Arg Arg Leu Val Gly Phe Ala Val Pro Ala
 1955 1960 1965
 Arg Glu Gly Gly Phe Asp Ala Ala Gly Leu Arg Arg Gln Leu Ala Arg
 1970 1975 1980
 Arg Leu Pro Ala Tyr Met Val Pro Thr Thr Leu Leu Pro Leu Asp Arg
 1985 1990 1995 2000
 Leu Pro Leu Thr Ala Asn Gly Lys Val Asp Arg Ala Ala Leu Gln Arg
 2005 2010 2015
 Leu Val Pro Gly Arg Ala Pro Ala Pro Ala Glu Pro Ala Thr Ala Pro
 2020 2025 2030
 Pro Ala Arg Ser Arg Ala Val Pro Val Pro Gly Trp Leu Ala Asp Leu
 2035 2040 2045
 Trp Cys Glu Leu Leu Asp Val Pro Glu Ala Asp Pro Asp Ala Asn Phe
 2050 2055 2060

Phe	Ala	Leu	Gly	Gly	Thr	Ser	Arg	Val	Ala	Ile	Thr	Leu	Val	Thr	Arg	2065	2070	2075	2080
Ile	Glu	Ala	Arg	Leu	Ala	Val	Arg	Val	Pro	Leu	Ala	Arg	Leu	Phe	Asp	2085	2090	2095	
Ala	Arg	Thr	Leu	Gly	Gly	Leu	Ala	Glu	Thr	Ile	Ala	Glu	Leu	Ser	Ala	2100	2105	2110	
Ala	Ala	Glu	Glu	Glu	Pro	Ala	Pro	Ala	Glu	Pro	Val	Tyr	Ala	Pro	Asp	2115	2120	2125	
Pro	Ala	Thr	Arg	His	Glu	Pro	Phe	Pro	Leu	Thr	Asp	Ile	Gln	Arg	Ala	2130	2135	2140	
Tyr	Trp	Leu	Gly	Arg	His	Arg	Ser	Leu	Ser	Leu	Gly	Gly	Val	Ala	Thr	2145	2150	2155	2160
His	Thr	Tyr	Leu	Glu	Leu	Asp	Val	Glu	Asp	Leu	Asp	Pro	Gly	Arg	Leu	2165	2170	2175	
Gln	Thr	Ala	Leu	Arg	Arg	Leu	Ile	Asp	Arg	His	Asp	Ala	Leu	Arg	Leu	2180	2185	2190	
Val	Val	Leu	Pro	Asp	Gly	Arg	Gln	Gln	Ile	Leu	Gly	Asp	Val	Pro	Pro	2195	2200	2205	
Tyr	Leu	Leu	Ala	His	Thr	Asp	Leu	Arg	Gly	Arg	Ala	Asp	Ala	Glu	Ala	2210	2215	2220	
Glu	Leu	Ala	Arg	Val	Arg	Glu	His	Met	Ser	His	Glu	Val	Arg	Asp	Ala	2225	2230	2235	2240
Ser	Arg	Trp	Pro	Leu	Phe	Asp	Val	Arg	Thr	His	Arg	Leu	Asp	Asp	Val	2245	2250	2255	
Arg	Thr	Arg	Leu	His	Leu	Ser	Leu	Asp	Leu	Leu	Ile	Ala	Asp	Ala	His	2260	2265	2270	
Ser	Val	His	Val	Leu	Thr	Gly	Asp	Leu	Leu	Thr	Phe	Tyr	Ala	Asp	Pro	2275	2280	2285	
Asp	Ala	Ala	Leu	Pro	Pro	Leu	Gly	Cys	Ser	Phe	Arg	Asp	Tyr	Val	Leu	2290	2295	2300	
Ala	Val	Arg	Ala	His	Ala	Glu	Gly	Glu	Pro	Arg	Arg	Arg	Ala	Leu	Asp	2305	2310	2315	2320
His	Trp	Arg	Ala	Arg	Leu	Ala	Asp	Leu	Pro	Gly	Pro	Pro	Gly	Leu	Pro	2325	2330	2335	
Leu	Arg	Cys	Arg	Pro	Glu	Glu	Leu	Thr	Ala	Pro	Arg	Phe	Ala	Arg	Leu	2340	2345	2350	
Thr	Thr	Gly	Leu	Gly	Pro	Asp	Ala	Trp	Ala	Arg	Leu	Arg	Arg	Ala	Ala	2355	2360	2365	

Ala Ala Ala Glu Leu Thr Pro Ala Ala Leu Ile Cys Ala Ala Phe Cys
 2370 2375 2380
 Asp Val Leu Ala Gln Trp Ser Asp Thr Pro Arg Phe Thr Leu Asn Leu
 2385 2390 2395 2400
 Thr Thr Phe His Arg Pro Ala Leu Leu Pro Gly Val Asp Asp Leu Val
 2405 2410 2415
 Gly Asp Phe Thr Thr Thr Thr Leu Leu Gly Val Asp Gly Glu Gly Asp
 2420 2425 2430
 Thr Phe Arg Asp Arg Ala Arg Arg Leu Gln Asp Arg Ile Trp Glu Asp
 2435 2440 2445
 Leu Glu His Arg Val Val Ser Gly Val Glu Val Leu Arg Met Leu Arg
 2450 2455 2460
 Arg Glu Arg Gly Thr His Asp Ala Val Arg Met Pro Val Val Phe Thr
 2465 2470 2475 2480
 Ser Thr Leu Arg Ala Ala Gly Pro Ala Pro Arg Thr Ala Pro Pro Ala
 2485 2490 2495
 Trp Arg Val Arg Pro Gly Tyr Ala Ile Ser Gln Thr Pro Gln Val Leu
 2500 2505 2510
 Leu Asp His Gln Val Ser Glu Ser Asp Gly Arg Leu Val Cys Thr Trp
 2515 2520 2525
 Asp Tyr Val Ala Asp Ala Tyr Pro Pro Gly Leu Ile Glu Ala Met Phe
 2530 2535 2540
 Gly Ala Phe Glu Ala Leu Leu Ala Ser Leu Ala Gly His Asp Asp Asp
 2545 2550 2555 2560
 Ala Gly His Asp Asp Asp Ala Gly His Asp Asp Gly Pro Gly His Asp
 2565 2570 2575
 Asp Gly Pro Gly His Asp Asp Gly Pro Gly His Asp Asp Gly Pro Gly
 2580 2585 2590
 His Asp Asp Gly Pro Gly Arg Asp Asp Ser Ala Asp His Gly His Ser
 2595 2600 2605
 Ala Thr His Asp Asp Ser Ala Ala Arg Asn Asp Arg Glu Gly Gly Gly
 2610 2615 2620
 Pro Glu
 2625

<210> 107

<211> 935

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF16

<400> 107

Met	Thr	Ser	Ala	Arg	Pro	Thr	Pro	Thr	Leu	Leu	Pro	Ala	Asp	Gln	Arg	1	5	10	15
Glu	Leu	Leu	Arg	Met	Met	Asn	Asp	Arg	Thr	Ala	Pro	Val	Pro	Ala	His	20	25	30	
Thr	Leu	Thr	Ala	Gln	Leu	Ala	Asp	Ala	Ala	Arg	Thr	His	Asp	Arg	Ala	35	40	45	
Leu	Ala	Leu	Val	Ala	Pro	Gly	Leu	Thr	Leu	Ser	His	Ala	Glu	Leu	Asp	50	55	60	
Ala	Arg	Ala	Ala	Ala	Val	Ala	Ala	Arg	Leu	Thr	Ala	Ala	Gly	Val	Ile	65	70	75	80
Pro	Gly	Asp	Arg	Val	Ala	Leu	Ala	Val	Glu	Tyr	Gly	Trp	Glu	Gln	Val	85	90	95	
Val	Gly	Ala	Leu	Ala	Ala	Leu	Arg	Ala	Gly	Ala	Val	Cys	Leu	Pro	Val	100	105	110	
Ala	Pro	Gly	Leu	Pro	Arg	Pro	Ala	Arg	Trp	Gln	His	Ala	Thr	Arg	Ala	115	120	125	
Gly	Ala	Thr	Ala	Val	Leu	Thr	Gln	Ser	Trp	Leu	Thr	Gln	Arg	Ile	Asp	130	135	140	
Trp	Pro	Gln	Glu	Leu	Pro	Val	Leu	Ser	Val	Asp	Glu	Pro	Gly	Pro	Pro	145	150	155	160
Val	Pro	Pro	Thr	Thr	Ala	Pro	Ala	Asp	Gly	Arg	Ser	Ala	Thr	Asp	Ala	165	170	175	
Ala	Tyr	Arg	Leu	Asp	Ala	Pro	Val	Ser	His	Arg	Ala	Ile	Thr	Thr	Ala	180	185	190	
Ala	Leu	Glu	Ile	Asp	Arg	Ala	Phe	Arg	Val	Gly	Pro	Gly	Asp	Arg	Leu	195	200	205	
Leu	Ala	Leu	Ala	Pro	Ala	Asp	Ser	Pro	Leu	Ala	Leu	Tyr	Glu	Leu	Phe	210	215	220	
Gly	Pro	Leu	Leu	Ala	Gly	Ala	Ala	Leu	Val	Leu	Thr	Arg	Asp	Ile	Asp	225	230	235	240
Leu	Arg	Asp	Pro	Gly	Ala	Leu	His	Glu	Ala	Leu	Arg	Thr	His	Gly	Val	245	250	255	
Thr	Leu	Trp	His	Ser	Pro	Pro	Ala	Leu	Leu	Gly	Leu	Leu	Leu	Asp	His	260	265	270	
Leu	Ala	Asp	Arg	Gly	Gly	Lys	Leu	Pro	Glu	Ser	Leu	Arg	Leu	Val	Leu	275	280	285	

Leu	Gly	Gly	Glu	Arg	Leu	Asp	Pro	Ala	Leu	Val	Arg	Arg	Val	Arg	Glu	290	295	300
Ser	Ala	Pro	His	Gln	Pro	Ala	Val	Ala	His	Leu	Ser	Ser	Ala	Thr	Pro	305	310	315
Ser	Gly	Pro	Trp	Thr	Thr	Cys	Leu	Glu	Thr	Gly	Asp	Leu	Ala	Pro	Glu	325	330	335
Trp	Arg	Ser	Val	Pro	Val	Gly	Ala	Pro	Leu	Pro	Asn	Gln	Arg	Ala	His	340	345	350
Ile	Leu	Ser	Glu	Thr	Leu	Arg	Pro	Cys	Pro	Val	Trp	Val	Thr	Gly	Arg	355	360	365
Leu	His	Tyr	Gly	Gly	Val	Ala	Ala	Glu	Pro	Pro	Thr	Gly	Glu	Glu	His	370	375	380
Ala	Pro	Ala	Thr	Val	Pro	His	Pro	Glu	Thr	Gly	Glu	Pro	Leu	Leu	Arg	385	390	395
Thr	Gly	Leu	Phe	Ala	Arg	Leu	Leu	Pro	Glu	Gly	Leu	Ile	Asp	Val	Val	405	410	415
Gly	Asp	Glu	Thr	Ala	Arg	Ile	Ser	Val	Arg	Asp	Arg	Pro	Leu	Asn	Leu	420	425	430
Gln	Asp	Thr	Glu	Thr	Ala	Leu	Ala	Ala	His	Glu	Asp	Val	His	Ser	Ala	435	440	445
Val	Val	Val	Pro	Val	Gly	Arg	Gly	Asp	Glu	Ser	Leu	Ala	Arg	Val	Arg	450	455	460
Leu	His	Pro	Gly	Ala	Thr	Ala	Gly	Pro	Asp	Glu	Leu	Leu	Ala	His	Leu	465	470	475
Arg	Arg	Lys	Val	Ser	Pro	Tyr	Leu	Leu	Pro	Gly	His	Ile	Glu	Val	Gly	485	490	495
Gly	Pro	Leu	Pro	Leu	Thr	Arg	Asp	Gly	Arg	Val	Asp	Arg	Ala	Arg	Val	500	505	510
Thr	Ala	Glu	Ala	Pro	Ala	Pro	Ala	Ala	Val	Pro	Ala	Ala	Ala	Pro	Ala	515	520	525
Ala	Ser	Ala	Pro	Ala	Arg	Asp	Glu	Ala	Glu	Leu	Leu	Ala	Gln	Val	Ala	530	535	540
Arg	Val	Thr	Cys	Arg	Val	Leu	Gly	Ile	Gly	Ala	Val	Glu	Pro	Asp	Met	545	550	555
Asn	Leu	Leu	Asp	Ala	Gly	Ala	Thr	Ser	Val	Glu	Leu	Val	Arg	Leu	Ala	565	570	575
Thr	Ala	Leu	Glu	Glu	Glu	Leu	Gly	Leu	Asp	Thr	Asp	Ile	Glu	Glu	Leu	580	585	590

Leu	Ala	Phe	Pro	Ser	Val	Ala	Val	Ile	Val	Gly	Arg	His	Leu	Gly	Arg	595	600	605
Arg	Thr	Ala	Pro	Pro	Ala	Arg	Asp	Pro	Leu	Pro	Pro	Ala	Ser	Val	Ala	610	615	620
Phe	Ala	Pro	Gly	Ser	Val	Leu	Pro	Ala	Pro	Pro	Ala	Pro	Gly	Pro	Val	625	630	635
Pro	Pro	Ala	Ser	Val	Pro	Pro	Ala	Pro	Ala	Ser	Val	Pro	Pro	Ala	Ser	645	650	655
Glu	Ser	Ser	Pro	Leu	Ala	Pro	Pro	Ala	Pro	Gly	Pro	Val	Pro	Pro	Thr	660	665	670
Pro	Val	Pro	Pro	Ala	Ser	Val	Pro	Pro	Ala	Ser	Gly	Ala	Ala	Pro	His	675	680	685
Val	Pro	Pro	Ala	Pro	Pro	Ala	Pro	Ile	Pro	Ala	Pro	Ser	Val	Pro	Pro	690	695	700
Ala	Pro	Arg	Pro	Gln	Pro	Pro	Leu	Leu	Thr	Gly	Ile	Gly	Ala	Arg	Gln	705	710	715
Ala	Phe	Lys	Asp	Ala	His	His	Gly	Ile	Arg	His	Glu	Phe	Asp	Ala	Thr	725	730	735
Asp	Gly	Val	Ala	Leu	Ser	Gly	Pro	Asp	Asp	His	His	Leu	Thr	Ala	Arg	740	745	750
Arg	Ser	His	His	Arg	Phe	Asp	Pro	Gly	Pro	Val	Thr	Leu	Pro	Asp	Leu	755	760	765
Ala	Ala	Leu	Leu	Gly	Ala	Leu	Arg	Arg	Val	Arg	Gly	Pro	Gly	Gly	Glu	770	775	780
Pro	Lys	Tyr	Ala	Tyr	Pro	Ser	Ala	Gly	Ser	Ser	Tyr	Pro	Val	Gln	Thr	785	790	795
Tyr	Leu	Leu	Val	His	Pro	Gly	Lys	Val	Thr	Gly	Leu	Pro	Gly	Gly	Ser	805	810	815
His	Tyr	Val	His	Pro	Ala	Arg	Asn	Arg	Leu	Val	Ser	Ile	Asp	Pro	Thr	820	825	830
Ala	Thr	Leu	Pro	Ala	Asp	Ala	His	Ala	Glu	Ile	Asn	Arg	Ala	Ala	Tyr	835	840	845
Gly	Glu	Ala	Ala	Phe	Ser	Leu	Tyr	Leu	Ile	Ala	Ala	Ile	Asp	Ala	Ile	850	855	860
Thr	Pro	Leu	Tyr	Gly	Asp	Leu	Ser	Trp	Asp	Phe	Thr	Val	Phe	Glu	Ala	865	870	875
Gly	Ala	Met	Thr	Gln	Leu	Leu	Met	Arg	Thr	Ala	Val	Gly	Thr	Gly	Ile	885	890	895

Gly Leu Cys Pro Val Gly Thr Met Asp Pro Ala Pro Leu Arg Arg Ala
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Phe Ala Leu Thr Asp Arg His Arg Phe Val His Ala Leu Leu Gly Gly
 915 920 925

Arg Pro Arg Thr Glu Ala Pro
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<210> 108

<211> 339

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF15

<400> 108

Met Asn Arg His Gly Pro Leu Ala Gly Arg Arg Gln Ser Val Asp Thr
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Arg Ser Ala Ala Trp Val Ala Pro Thr Gly Thr Pro Gly Leu Pro Leu
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Glu Val Ala Ala Thr Arg Asp Gly Val Asp Pro Ala Glu Trp Ala Arg
 35 40 45

Thr His Leu Asp Thr Val Thr Gly Trp Leu His Arg His Gly Ala Val
 50 55 60

Leu Phe Arg Gly Phe Gly Val Gly Leu Asp Gly Phe Gly Asp Val Val
 65 70 75 80

His Ala Leu Ala Gly Ser Pro Glu Ala Tyr Val Glu Arg Ser Ser Pro
 85 90 95

Arg Thr Ala Leu Gly His His Leu Tyr Thr Ala Thr Asp His Pro Ala
 100 105 110

Asp Gln Pro Ile Pro Pro His Asn Glu Asn Ser Tyr Gln Leu Arg Phe
 115 120 125

Pro Gly Arg Leu Val Phe Gly Cys Leu Thr Pro Ala Arg Thr Gly Gly
 130 135 140

Ala Thr Pro Leu Ala Asp Thr Arg Arg Val Leu Gly Arg Leu Asp Pro
 145 150 155 160

Ala Leu Val Ala Ala Phe Ala Arg Arg Gly Val Leu Tyr Gln Arg Asn
 165 170 175

Tyr Gly Asp Gly Ile Gly Met Ser Trp Gln Asp Ala Phe Gln Thr Arg
 180 185 190

Asp Lys Ala Ala Val Thr Ala Tyr Cys Ala Ala Arg Arg Val Asp Val
 195 200 205

Glu Trp Lys Pro Asp Gly Gly Leu Arg Thr Thr Gln Val Arg Pro Ala
 210 215 220
 Leu Ala Val His Pro Ala Thr Gly Glu Arg Val Trp Phe Asn His Ala
 225 230 235 240
 Ala Phe Phe His Val Ser Ala Arg Pro Pro Ala Leu Arg Asp Ala Leu
 245 250 255
 Leu Ala Gln Phe Asp Glu Arg Asp Leu Pro Ser His Ser Cys Tyr Gly
 260 265 270
 Asp Gly Arg Pro Ile Glu Pro Ala Val Met Glu Glu Leu His His Ala
 275 280 285
 Tyr Ala Ala Glu Leu Val Ala Pro Ala Trp Arg Ala Gly Asp Val Leu
 290 295 300
 Leu Val Asp Asn Leu Leu Thr Ala His Gly Arg Glu Pro Phe Thr Gly
 305 310 315 320
 Glu Arg Arg Val Val Val Gly Met Ala Gln Pro Leu Asp Trp Asp Glu
 325 330 335
 Val Ser Ala

<210> 109
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 <213> Streptomyces verticillius

<220>
 <223> ORF14

<400> 109
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 Arg Ala Leu Arg Leu Thr Gly Asp Thr Asp Thr Ala Arg Leu Thr Glu
 35 40 45
 Ala Val Arg Arg Val Thr Ala Ala Leu Pro Ala Leu Thr Ala Glu Leu
 50 55 60
 Ser Gly Asp Glu Glu Pro Arg Leu Thr Leu Arg Pro Asp Ala Pro Glu
 65 70 75 80
 Val Thr Pro Val Asp Leu Arg Gly Ala Pro Ser Ala Gly Arg Asp Ala
 85 90 95
 Val Cys Val Ala Leu Leu Arg Ala Asp Arg Asp His Pro Arg Ala Gly
 100 105 110

Arg	His	Arg	Ala	Arg	Phe	His	Leu	Val	Arg	Leu	His	Asp	Asp	Glu	Thr
		115					120					125			
Val	Leu	Ala	Leu	Thr	Ala	His	Thr	Leu	Leu	Leu	Asp	Thr	Pro	Ser	Leu
	130					135					140				
Tyr	Ala	Val	Leu	Gly	Ala	Val	Cys	Gln	Ala	Tyr	Ala	Gly	Arg	Phe	Arg
145					150					155					160
Pro	Glu	His	Tyr	Arg	Asp	Ala	Thr	Thr	Leu	Pro	Asp	Ala	Pro	His	Ala
				165					170					175	
Pro	Leu	Ser	Gly	Arg	Ala	Arg	Ala	Ser	Arg	Arg	Arg	Trp	Trp	His	Arg
			180					185						190	
Arg	Leu	Ala	Ala	Leu	Pro	Gly	Pro	Ala	Pro	Ala	Pro	Ala	Gly	Pro	Pro
		195					200					205			
Arg	Asp	Arg	Val	Thr	Glu	Thr	His	Arg	Leu	Arg	Ile	Pro	Ala	Ala	Arg
	210					215					220				
Trp	Lys	Ala	Leu	Thr	Ala	Leu	Thr	Ala	Leu	Gly	Gly	Pro	Leu	Gly	Gly
225					230					235					240
Asn	Gly	Ser	Leu	Ala	Val	Met	Ala	Leu	Ala	Ala	Trp	Cys	Leu	Arg	Ala
				245					250					255	
Pro	Asp	His	Arg	Gly	Pro	Ala	Arg	Phe	Thr	Thr	Val	Val	Asp	Leu	Arg
			260					265					270		
Asp	His	Leu	Gly	Leu	Gly	Pro	Ala	Val	Gly	Pro	Phe	Thr	Asp	Arg	Leu
		275					280					285			
Val	Phe	Gly	Ala	Asp	Leu	Gly	Glu	Ala	Pro	Arg	Pro	Ser	Phe	Arg	Asp
	290					295					300				
Val	Thr	Leu	Arg	Ala	Gln	Ser	Gly	Phe	Leu	Asp	Ala	Val	Val	His	Tyr
305					310					315					320
Leu	Pro	Tyr	Gly	Asp	Val	Val	Glu	Leu	Gly	Arg	Glu	Leu	Gly	Arg	Val
				325					330					335	
Thr	Ala	Pro	Arg	Thr	Ala	Ala	His	Trp	Asp	Val	Ala	Leu	Asn	Phe	Cys
			340					345					350		
Arg	Asn	Pro	Pro	Thr	Ser	Ala	Ala	Thr	Arg	Gly	Glu	Arg	Thr	Leu	Ala
		355					360					365			
Glu	Arg	Gly	Leu	Ser	Ile	Glu	Leu	Phe	Arg	Glu	Ala	Asp	Leu	Leu	Gly
	370					375					380				
Ala	Ala	Gly	Thr	Gly	Pro	Ala	His	Arg	Trp	Asp	Gly	Thr	Val	Leu	Ala
385					390					395					400
Leu	Ser	Leu	Gly	Glu	Leu	Gly	Asp	Asp	Thr	Val	Leu	Val	Leu	Asp	Ala
				405					410					415	

Asp Arg Asp His Pro His His Gly Thr Ala Asp Arg Leu Leu His Arg
 420 425 430

Met Asp Glu Ala Leu Leu Ala Ala Val Ala Asp Pro Asp Ala Pro Leu
 435 440 445

Pro Pro Leu Pro Ala Pro Ala His Thr Thr Arg Ser His Arg
 450 455 460

<210> 110

<211> 187

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF13

<400> 110

Met Thr Thr Thr Pro Arg Thr Ala Ala Glu Pro Thr Tyr His Val Val
 1 5 10 15

Val Asn Asp Glu Glu Gln Tyr Ser Ile Trp Leu Ala Glu Gln Glu Ile
 20 25 30

Pro Ala Gly Trp Arg Ala Thr Gly Thr Ser Gly Thr Gln Glu Glu Cys
 35 40 45

Leu Arg His Ile Asp Glu Val Trp Thr Asp Met Arg Pro Arg Ser Leu
 50 55 60

Arg Glu Ala Met Ala Ala Ala Glu His Ala Glu Pro Ala Pro Ala Pro
 65 70 75 80

Ala Pro Ala Glu Glu Glu Pro Ser Leu Val Asp Arg Leu Cys Ala Gly
 85 90 95

Asp Gln Pro Val Glu Ser Val Leu Arg Pro Glu Arg Thr Ala Ala Ala
 100 105 110

Leu Arg Glu Ala Val Asp Arg Gly Tyr Val Phe Val Arg Phe Ala Ala
 115 120 125

Thr Arg Gly Gly Thr Glu Leu Gly Val Ala Val Asp Pro Ala Ala Thr
 130 135 140

Thr Met Asp Gly Thr Glu Leu Arg Leu Thr Gly Thr Leu Thr Leu Asp
 145 150 155 160

Phe Glu Pro Val Arg Cys His Ala Arg Val Asp Val Thr Thr Phe Thr
 165 170 175

Gly Glu Gly Arg Leu Glu Arg Val Ser Gly Thr
 180 185

<210> 111

<211> 390

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF12

<400> 111

Met	Thr	Thr	Pro	Met	Thr	Thr	Pro	Thr	Thr	Thr	Arg	Thr	Thr	Thr	Arg
1				5					10					15	
Thr	Ala	Val	Phe	Ala	His	Leu	Arg	Ala	Pro	Gly	Leu	Gly	Asp	Leu	Leu
			20					25					30		
Gln	Arg	Asn	Ile	Gly	Leu	Ala	Leu	Val	Arg	Arg	Ala	Arg	Pro	Ala	Thr
		35					40					45			
Ala	Val	Thr	Leu	Val	Val	Gly	Glu	Asp	Leu	Ala	Ala	Arg	Phe	Gly	Pro
	50					55					60				
Ala	Leu	Thr	Arg	His	Thr	Tyr	Ala	Thr	Asp	Val	Leu	Pro	Cys	Pro	Gln
	65				70					75					80
Arg	Gly	Glu	Ala	Asp	Pro	Arg	Trp	Pro	Ala	Phe	Leu	Arg	Thr	Leu	Ala
				85					90					95	
Asp	Arg	Arg	Phe	Ala	Leu	Ala	Val	Val	Asp	Pro	Asp	Ser	Gln	Gly	Leu
			100					105					110		
His	Ala	Gly	His	Ala	Arg	Ala	Ala	Gly	Val	Pro	Glu	Arg	Ile	Gly	Leu
		115					120					125			
Pro	Gln	Asp	Arg	Pro	Gly	Asp	Glu	His	Ile	Thr	His	Pro	Ile	Arg	Leu
	130					135						140			
Pro	Arg	Pro	Leu	Trp	Gly	Thr	Pro	Asp	Leu	Tyr	Glu	Tyr	Ala	Thr	Ala
	145				150					155					160
Leu	Ala	Ala	Ala	Leu	Gly	Leu	Pro	Ala	Pro	Pro	Arg	Pro	Gly	Asp	Val
				165					170					175	
Leu	Pro	Glu	Leu	Pro	Arg	Thr	Arg	Gly	Val	Arg	Pro	Pro	Thr	Ala	Gly
			180					185					190		
Leu	Pro	Arg	Pro	Leu	Val	Ala	Val	His	Pro	Gly	Gly	Ala	Pro	His	Trp
		195					200					205			
Asn	Arg	Arg	Trp	Pro	Leu	Glu	His	Tyr	Ala	Arg	Leu	Cys	Ala	Arg	Leu
	210					215					220				
Ala	Ala	Glu	Leu	Ser	Ala	Ser	Leu	Cys	Leu	Leu	Gly	Asp	Glu	Ala	Glu
	225				230					235					240
Arg	Pro	Glu	Leu	Glu	Leu	Leu	Arg	His	Ala	Val	Leu	Thr	Arg	Ser	Pro
			245						250					255	
Arg	Ala	Val	Val	His	Leu	Glu	Ala	Gly	Ala	Asp	Leu	Asp	Arg	Thr	Ala
		260						265					270		

Asn Val Leu Ala Asp Ala Asp Leu Leu Val Gly Asn Asp Ser Ser Leu
 275 280 285
 Ala His Val Ala Ala Ala Val Arg Thr Pro Ser Val Val Leu Tyr Gly
 290 295 300
 Pro Thr Gly Thr Glu Tyr Leu Trp Thr Arg Ile Tyr Pro Tyr His Arg
 305 310 315 320
 Gly Val Ser Leu Arg Trp Pro Cys Gln Arg Leu Arg His Ala Ala Gly
 325 330 335
 Glu Leu Ala Gly Arg Arg Cys Ala His Gly Cys Val Leu Pro Tyr Gln
 340 345 350
 Gly Pro Ala Gly Pro Tyr Pro Arg Cys Leu Ala Asp Leu Pro Val Asp
 355 360 365
 Arg Val Trp Pro Ala Val Thr Ala Arg Trp Ala Ser Pro His Pro Val
 370 375 380
 Thr Ile Arg Ser Thr Pro
 385 390

<210> 112

<211> 545

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF11

<400> 112

Met Ser Ala Asp Pro Ser Arg Val Arg Thr Ile Leu Ser Val Asn Phe
 1 5 10 15
 Asn His Asp Gly Ser Gly Val Leu Leu Arg Glu Gly Arg Ile Ala Gly
 20 25 30
 Tyr Val Thr Thr Glu Arg Arg Ser Arg Leu Lys Lys His Pro Gly Leu
 35 40 45
 Arg Glu Glu Asp Leu Asp Glu Leu Leu Asp Gln Ala Gly Ala Asp Leu
 50 55 60
 Ser Asp Ile Asp His Val Met Leu Cys Asn Leu His Thr Met Asp Thr
 65 70 75 80
 Pro Asp Ile Pro Arg Leu His Gly Ser Asp Leu Lys Glu Thr Trp Leu
 85 90 95
 Ala Phe Trp Val Asn Gln Arg Asn Asp Glu Val Ser Leu Arg Gly Arg
 100 105 110
 Arg Ile Pro Cys Thr Val Asn Pro Asp His His Leu Ile His Ala Ala
 115 120 125

Thr	Ala	Tyr	Tyr	Thr	Ser	Gly	Tyr	Asp	Ser	Ala	Met	Ala	Val	Ala	Ile	130	135	140
Asp	Pro	Thr	Gly	Cys	Arg	Ala	Phe	Ala	Gly	Lys	Gly	Ser	Arg	Leu	Tyr	145	150	155
Pro	Leu	Arg	Arg	Asp	Leu	Asp	Ala	Trp	Phe	Asn	Ala	Asn	Ile	Gly	Tyr	165	170	175
Cys	Tyr	Val	Ala	Asp	Leu	Met	Phe	Gly	Ser	Ser	Ile	Val	Gly	Ala	Gly	180	185	190
Lys	Val	Met	Gly	Leu	Ala	Pro	Tyr	Gly	Arg	Pro	Ala	Asp	Gly	Ala	Gly	195	200	205
Pro	Asp	Glu	Glu	Pro	Pro	Glu	Thr	Val	Arg	Asp	Phe	Ala	Ala	Leu	Val	210	215	220
Ala	Leu	Ala	Asp	Arg	His	Pro	Arg	Leu	Val	Asp	Val	Asp	Gly	Arg	Lys	225	230	235
Leu	Asn	Ala	Thr	Leu	Ala	His	Tyr	Ile	Gln	Leu	Gly	Leu	Glu	Arg	Gln	245	250	255
Leu	Thr	Ala	Val	Phe	Ala	Glu	Leu	Ala	Pro	Leu	Cys	Ala	Arg	Asn	Gly	260	265	270
Ile	Ala	Pro	Asp	Ile	Cys	Leu	Ser	Gly	Gly	Thr	Ala	Leu	Asn	Ala	Ile	275	280	285
Ala	Thr	Gln	Leu	Ala	Phe	Glu	Ser	Thr	Gly	Phe	Glu	Arg	Met	His	Leu	290	295	300
His	Pro	Ala	Cys	Gly	Asp	Asp	Gly	Thr	Ala	Ile	Gly	Ala	Ala	Leu	Trp	305	310	315
His	Trp	His	His	Val	Leu	Gly	His	Pro	Arg	Leu	His	His	Thr	Asn	Ala	325	330	335
Asp	Leu	Met	Tyr	Ser	Val	Arg	Glu	Tyr	Pro	Glu	His	Thr	Val	Arg	Arg	340	345	350
Ala	Val	Arg	Asp	His	Ala	Ala	Asp	Leu	Val	Val	Glu	Glu	Thr	Gly	Asp	355	360	365
Tyr	Val	Ala	Arg	Ala	Ala	Glu	Leu	Val	Ala	Gly	Gly	Ala	Val	Ile	Gly	370	375	380
Trp	Tyr	Asp	Gly	Ala	Gly	Glu	Val	Gly	Pro	Arg	Ala	Leu	Gly	His	Arg	385	390	395
Ser	Ile	Val	Ala	Asp	Pro	Arg	Asp	Pro	Ala	Met	Arg	Asp	Arg	Leu	Asn	405	410	415
Ser	Gln	Val	Lys	Phe	Arg	Glu	His	Phe	Arg	Pro	Phe	Ala	Pro	Ser	Val	420	425	430

Leu Lys Glu His Ala Ala Glu Trp Phe Gly Leu Ser Asp Ser Pro Phe
 435 440 445

Met Leu Arg Ala Thr Pro Val Leu Lys Pro Gly Val Pro Ala Ile Thr
 450 455 460

His Val Asp Gly Thr Ser Arg Ile Gln Ser Val Thr Arg Gln Asp Thr
 465 470 475 480

Pro Ala Phe His Asp Leu Ile His Ala Phe Lys Asp Arg Thr Gly Ile
 485 490 495

Pro Met Val Leu Asn Thr Ser Leu Asn Thr Lys Gly Glu Pro Ile Ala
 500 505 510

Glu Thr Pro Glu Asp Ala Leu Arg Thr Leu Leu Gly Ser Arg Leu Asp
 515 520 525

His Leu Val Leu Pro Gly Leu Ile Val Ser Gly Arg Thr Ala Ala Arg
 530 535 540

Ser
 545

<210> 113

<211> 90

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF10

<400> 113

Met Ser Ala Pro Arg Gly Glu Arg Thr Arg Arg Arg Ala Leu Glu Arg
 1 5 10 15

Asp Ile Ala Ala Ile Trp Ala Glu Thr Leu Gly Arg Asp Ser Val Gly
 20 25 30

Pro His Glu Asp Phe Ala Ala Leu Gly Gly Asn Ser Ile His Ala Ile
 35 40 45

Lys Ile Thr Asn Arg Val Glu Glu Leu Val Asp Ala Glu Leu Ser Ile
 50 55 60

Arg Val Leu Leu Glu Thr Arg Thr Val Ala Gly Met Thr Asp His Val
 65 70 75 80

His Ala Thr Leu Thr Gly Glu Arg Asp Arg
 85 90

<210> 114

<211> 498

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF9

<400> 114

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Met Asn Thr Asp Leu Pro Arg Leu Leu Asp Arg Ile Ala Gly Leu Arg
 1           5           10           15

Val Leu Val Ile Gly Asp Val Ile Leu Asp Thr Tyr Val Trp Gly Ala
          20           25           30

Thr Ser Gly Leu Cys Arg Glu Ser Pro Val Pro Ala Val Thr Leu Thr
          35           40           45

Ser Val Ala His Gln Cys Gly Gly Ala Ala Asn Val Ala Val Asn Leu
          50           55           60

Arg Ala Leu Gly Ala Glu Pro Val Leu Leu Ser Ala Thr Gly Asp Asp
          65           70           75           80

Arg Ala Gly Arg Arg Leu Arg Glu Ala Leu Arg Ala Arg Asp Val Asp
          85           90           95

Thr Gly Gly Leu Phe Val Gln Pro Gly Arg Thr Thr Val Thr Lys Arg
          100          105          110

Arg Val Met Ala Asp Gly Gln Met Leu Leu Arg Leu Asp Glu Gly Gly
          115          120          125

Glu His Pro Leu Pro Val Ala Thr Asp Thr Gly Ser Arg Leu Leu Glu
          130          135          140

Arg Ala Ala Gly Leu Leu Pro Ala Val Asp Ala Val Ile Val Ser Asp
          145          150          155          160

Tyr Gly Tyr Gly Val Trp Glu Pro Asp Thr Val Ala Arg Leu Ala Ala
          165          170          175

His Arg Glu Leu Gly Pro Ser Thr Leu Val Val Asp Ser Arg Arg Pro
          180          185          190

Ala Arg Phe Thr Ala Leu Arg Ala Ser Ala Val Lys Pro Asn His Ala
          195          200          205

Glu Ala Leu Arg Leu Leu Asp Ala Gly Glu Pro Pro Pro Gly Pro Ala
          210          215          220

Arg Ala Asp Trp Ala Ala Ala Leu Gly Asp Arg Leu Leu Arg Leu Thr
          225          230          235          240

Gly Ala Glu Arg Val Ala Leu Thr Leu Asp Ala Asp Gly Ser Leu Leu
          245          250          255

Phe Glu Arg Asp Arg Pro Pro Val Arg Thr Phe Ala Arg Gly Ser Arg
          260          265          270

Ala Pro Val Thr Ala Ala Val Gly Ala Gly Asp Ala Phe Thr Ala Ala
          275          280          285

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Leu Thr Leu Ala Leu Ala Ala Gly Ala Asp Ser Ala Val Ala Ala Glu
 290 295 300
 Leu Ala Ser Ala Ala Ala Gly Thr Ala Val Ala Thr Pro Gly Thr Ser
 305 310 315 320
 Thr Trp His Ala Asp Glu Leu Arg Arg Leu Leu Gly Gly Thr Gly Lys
 325 330 335
 Val Cys Arg Thr Gly Thr Leu Pro Ala Arg Leu Leu Asp Pro Ala Ala
 340 345 350
 Arg Asp Arg Arg Val Val Phe Thr Asn Gly Cys Phe Asp Leu Leu His
 355 360 365
 Gly Gly His Val Ser Cys Leu Ser Arg Ala Lys Glu Leu Gly Asp Leu
 370 375 380
 Leu Val Val Gly Val Asn Ser Asp Ala Ser Val Arg Arg Leu Lys Gly
 385 390 395 400
 Pro Arg Arg Pro Val Ile Pro Leu Ala Glu Arg Met Arg Val Leu Ala
 405 410 415
 Ala Leu Ser Cys Val Asp Leu Val Val Pro Phe Asp Asp Asp Ser Pro
 420 425 430
 Ala Ala Leu Ile Glu Ala Leu Arg Pro Glu Val Tyr Ala Lys Gly Gly
 435 440 445
 Asp Tyr Thr Leu Ala Thr Leu Pro Glu Ala Pro Leu Val Gln Arg Leu
 450 455 460
 Gly Gly Val Val His Leu Leu Pro Ser Val Ala Asp Thr Ser Thr Thr
 465 470 475 480
 Asp Ile Ile Arg Arg Ile His Ala Leu Ser Arg Thr Gly Glu Gly Asp
 485 490 495
 Thr Pro

<210> 115
 <211> 424
 <212> PRT
 <213> Streptomyces verticillus

<220>
 <223> ORF8

<400> 115
 Met Ser His Ala Ile Gly Pro Ser Arg Leu Ile Pro Ala Ile Arg Glu
 1 5 10 15
 Ala Leu Gly Asp Glu Lys Asp Pro Arg Leu Ala Leu Tyr Val His Val
 20 25 30

Pro	Phe	Cys 35	Ser	Ser	Lys	Cys	His 40	Phe	Cys	Asp	Trp	Val 45	Thr	Asp	Ile
Pro	Val 50	Ala	Arg	Leu	Arg	Gly 55	Asp	Ser	Arg	Glu	Arg 60	Ser	Pro	Tyr	Val
Thr 65	Ala	Leu	Cys	Asp	Gln 70	Ile	Arg	Phe	Tyr	Gly 75	Pro	Gln	Leu	Thr	Arg 80
Leu	Gly	Tyr	Arg	Pro 85	Glu	Val	Met	Tyr	Trp 90	Gly	Gly	Gly	Thr	Pro 95	Thr
Arg	Leu	Thr	Gly 100	Asp	Glu	Met	Thr	Ala 105	Val	His	Gln	Ala	Leu	Asp	Asp
Ala	Phe	Asp 115	Leu	Thr	Gly	Leu	Arg 120	Gln	Trp	Ser	Val	Glu 125	Ser	Thr	Pro
Asn	Asp 130	Leu	Asp	Pro	Ala	Thr 135	Leu	Asp	Thr	Leu	Arg 140	Gly	Leu	Gly	Val
Thr 145	Arg	Val	Ser	Val	Gly 150	Val	Gln	Ser	Leu	Asn 155	Pro	Tyr	Gln	Leu	Arg 160
Lys	Ala	Gly	Arg	Ala 165	His	Ser	Arg	Glu	Gln 170	Ala	Leu	Ala	Ala	Val 175	Pro
Leu	Leu	Arg	Arg 180	Ala	Gly	Ile	Asp	Glu 185	Phe	Asn	Val	Asp	Leu	Ile	Ala
Gly	Phe	Pro 195	Gly	Glu	Ala	Val	Glu 200	Ser	Phe	Glu	Glu	Thr 205	Leu	Arg	Thr
Val	Leu 210	Ala	Leu	Asp	Pro	Pro 215	His	Val	Ser	Val	Tyr 220	Pro	Tyr	Arg	Ala
Thr 225	Pro	Lys	Thr	Val	Met 230	Ala	Met	Gln	Leu	Asp 235	Arg	Glu	Phe	Val	Glu 240
Ala	Arg	Asn	Arg	Asp 245	Gly	Met	Ile	Asp	Ala 250	Tyr	Glu	Arg	Ala	Met 255	Ala
Ala	Leu	Gly	Ala 260	Ala	Gly	Tyr	His	Glu 265	Tyr	Cys	His	Gly	Tyr 270	Trp	Val
Arg	Asp 275	Ala	Arg	His	Glu	Asp	Gln 280	Asp	Gly	Asn	Tyr	Lys 285	Tyr	Asp	Leu
Ala	Gly 290	Asp	Lys	Ile	Gly	Phe 295	Gly	Ser	Gly	Ala	Glu 300	Ser	Ile	Ile	Gly
His 305	His	Leu	Leu	Trp	Asn 310	Glu	Asn	Ser	Ala	Tyr 315	Ala	Arg	Tyr	Leu	Leu 320
Ala	Pro	Arg	Glu	Phe 325	Ser	Ala	Ala	His	Arg 330	Phe	Thr	Thr	Ala	Glu 335	Pro

Asp Arg Leu Thr Ala Pro Val Gly Gly Ala Leu Met Thr Arg Glu Gly
 340 345 350
 Val Val Phe Ala Arg Phe Arg Arg Leu Thr Gly Leu Asp Phe Ala Asp
 355 360 365
 Val Arg Ala Thr Pro Tyr Phe Arg Gln Trp Phe Glu Leu Leu Glu Arg
 370 375 380
 Cys Gly Gly Arg Phe Val Glu Thr Pro Tyr Ser Leu Arg Leu Glu Pro
 385 390 395 400
 Ser Thr Ile His Arg Ala Tyr Ile Thr His Leu Ala Tyr Thr Met Ala
 405 410 415
 His Gly Leu Ala Pro Glu Arg Ala
 420

<210> 116
 <211> 117
 <212> PRT
 <213> Streptomyces verticillus

<220>
 <223> ORF31

<400> 116
 Met Thr Glu Asn Leu Pro Ser Cys Pro Glu Cys Ser Ser Ala Tyr Thr
 1 5 10 15
 Tyr Glu Met Gly Ala Leu Leu Val Cys Pro Glu Cys Gly His Glu Trp
 20 25 30
 Pro Pro Ala Thr Ala Glu Ser Ala Asp Asn Pro Glu Asp Gly Ala Ile
 35 40 45
 Arg Asp Ala Val Gly Asn Val Leu Ala Asp Gly Asp Thr Val Thr Val
 50 55 60
 Val Lys Ser Leu Lys Val Lys Gly His Pro Thr Gly Ile Lys Ala Gly
 65 70 75 80
 Thr Lys Val Arg Asn Ile Arg Leu Val Glu Gly Val Ala Gly His Asp
 85 90 95
 Ile Asp Cys Lys Ile Asp Gly Phe Gly Ala Met Gln Leu Lys Ser Ser
 100 105 110
 Val Val Lys Lys Val
 115

<210> 117
 <211> 2841
 <212> PRT
 <213> Streptomyces verticillus

<220>

<223> ORF32

<400> 117

Met	Ala	Ser	Asp	Ala	Leu	Ser	Ala	His	Leu	Glu	Val	Ser	Asp	Cys	Arg
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Gln	Arg	Gly	Gly	Ile	Thr	Val	Thr	Asn	Asp	Gly	Ser	Glu	Leu	Ala	Gly
		20						25					30		
Gln	Asn	Val	Ala	Ala	Val	Arg	Phe	Glu	Arg	Tyr	Ser	Ala	Ile	Ala	Pro
		35					40					45			
Glu	Arg	Thr	Ala	Ile	Leu	His	Lys	Gly	Ala	Ala	Thr	Gly	Tyr	Asp	Glu
	50					55					60				
Leu	Asn	Arg	Arg	Ala	Glu	Leu	Thr	Ala	Thr	Arg	Leu	Ala	Asp	Ala	Gly
65					70					75					80
Ala	Gly	Pro	Ser	Thr	Leu	Val	Ala	Val	Ala	Leu	Pro	Arg	Asp	Pro	Asp
				85					90					95	
Leu	Val	Ala	Thr	Leu	Cys	Ala	Leu	Leu	Lys	Leu	Gly	Ala	Ala	Cys	Leu
			100					105					110		
Pro	Leu	Asp	Pro	Gly	Ile	Pro	Ala	Gly	Arg	Leu	Arg	Glu	Ile	Met	Ala
		115					120					125			
Asp	Ala	Ser	Pro	Asp	Val	Leu	Val	Thr	Thr	Arg	Ala	Val	Ala	Pro	Ala
	130					135					140				
Phe	Thr	Gly	Asp	Gly	Pro	Val	Leu	Phe	Leu	Asp	Asp	Ala	Pro	Pro	Thr
145					150					155					160
Cys	Ser	Ala	Val	Leu	Pro	Arg	His	Ser	Ala	Gly	Thr	Ala	Ser	Glu	Ile
				165					170					175	
Ala	Tyr	Val	Leu	Tyr	Pro	Thr	Thr	Pro	Asp	Glu	Lys	Ser	Glu	Asn	Ser
			180					185					190		
Val	Val	Ser	Tyr	Arg	Asp	Met	Ala	Arg	Tyr	Leu	Asp	Asp	Pro	Thr	Ala
		195					200					205			
Gly	Ile	Pro	Ala	Arg	Ala	Glu	Ile	Leu	Arg	Leu	Val	Ala	Pro	Leu	Leu
	210					215					220				
Ser	Gly	Gly	Arg	Leu	Val	Leu	Asp	Ala	Asp	Glu	Thr	Arg	Pro	Arg	Pro
225				230						235				240	
Val	Thr	Arg	Glu	Ala	Pro	Arg	Asp	Met	Val	Glu	Asp	Val	Val	Ala	Gln
				245					250					255	
Val	Trp	Cys	Ala	Val	Leu	Gly	Val	Asp	Arg	Val	Gly	Val	Arg	Asp	Arg
			260					265					270		
Phe	Phe	Asp	Leu	Gly	Gly	Lys	Ser	Leu	Ala	Ala	Val	Gln	Val	Val	Ala
		275					280					285			

Arg	Leu	Arg	Lys	Leu	Leu	Gly	Val	Glu	Leu	Pro	Leu	Arg	Ala	Leu	Phe	290	295	300	
Asp	Ala	Pro	Thr	Val	Glu	Glu	Leu	Ala	Ala	Arg	Val	Arg	Ala	Glu	Gln	305	310	315	320
Ala	Gly	Gly	Gln	Gly	Val	Arg	Glu	Glu	Ala	Ala	Leu	Glu	Pro	Val	Gly	325	330	335	
Arg	Ser	Glu	Pro	Leu	Pro	Leu	Ser	Phe	Ala	Gln	Gln	Arg	Leu	Trp	Phe	340	345	350	
Leu	Asp	Arg	Leu	Met	Pro	Asp	Arg	Ala	Phe	Tyr	Thr	Met	Cys	Asp	Ala	355	360	365	
Phe	Arg	Val	Arg	Gly	Gly	Ile	Asp	Leu	Gly	Ala	Leu	Arg	Arg	Ala	Leu	370	375	380	
Arg	Met	Leu	Val	Gly	Arg	His	Glu	Thr	Leu	Arg	Thr	Ala	Phe	Val	Glu	385	390	395	400
Arg	Asp	Gly	Val	Pro	Tyr	Gln	Leu	Val	Gly	Pro	Ala	Asp	Gly	Pro	Gly	405	410	415	
Ala	Arg	Arg	Val	Ala	Ala	Pro	Thr	Arg	Val	Asp	Leu	Ser	Leu	Leu	Glu	420	425	430	
Pro	Ala	Glu	Arg	Glu	Glu	Ala	Val	Arg	Asn	Leu	Val	Ala	Ala	Glu	Ala	435	440	445	
Arg	Thr	Pro	Phe	Arg	Pro	Ala	Asp	Gly	Ala	Leu	Leu	Arg	Val	Val	Val	450	455	460	
Ala	Arg	Leu	Ala	Asp	Asp	Asp	His	Val	Leu	Val	Val	Ser	Thr	His	His	465	470	475	480
Ile	Val	Ser	Asp	Ala	Trp	Ser	Val	Gly	Val	Leu	Val	Asp	Glu	Leu	Gly	485	490	495	
Arg	Leu	Tyr	Arg	Glu	Cys	Val	Thr	Gly	Asp	Pro	Ala	Ala	Leu	Pro	Pro	500	505	510	
Pro	Ala	Val	Gln	Tyr	Ala	Asp	Phe	Ala	Val	Trp	Gln	Arg	Ala	Trp	Met	515	520	525	
Ala	Gly	Pro	Val	Gln	Glu	Glu	His	Leu	Ala	Tyr	Trp	Lys	Arg	Ala	Leu	530	535	540	
Asp	Gly	Ala	Pro	Ser	Val	Leu	Arg	Leu	Pro	Met	Asp	His	Pro	Arg	Pro	545	550	555	560
Ala	Val	Gln	Ser	Glu	Arg	Gly	Glu	Thr	Val	Gly	Phe	Ala	Leu	Pro	Asp	565	570	575	
Ala	Leu	Val	Ala	Ala	Leu	Glu	Lys	Leu	Gly	Arg	Glu	Gln	Gly	Ala	Thr	580	585	590	

Leu	Phe	Met	Thr	Leu	Leu	Gly	Ala	Phe	Gln	Val	Leu	Leu	Ala	Arg	His	595	600	605	
Ala	Gly	Gln	Glu	Asp	Ile	Val	Val	Gly	Val	Pro	Ala	Ala	Gly	Arg	Thr	610	615	620	
Arg	Thr	Glu	Thr	Glu	Pro	Leu	Val	Gly	Phe	Phe	Val	Asn	Thr	Leu	Pro	625	630	635	640
Leu	Arg	Ala	Ile	Cys	Ala	Pro	Gly	Leu	Ser	Phe	Arg	Asp	Leu	Leu	Asp	645	650	655	
Gln	Val	Arg	Glu	Ala	Ala	Leu	Gly	Ala	Phe	Ala	His	Gln	Asp	Leu	Pro	660	665	670	
Phe	Glu	Ala	Leu	Val	Glu	Ala	Leu	Ala	Pro	Glu	Arg	Asp	Leu	Gly	His	675	680	685	
Asn	Pro	Leu	Val	Gln	Val	Thr	Phe	Gln	Leu	Leu	Gly	Thr	Pro	Ala	Ala	690	695	700	
Arg	Pro	Asp	Leu	Ile	Gly	Thr	Glu	Val	Glu	Arg	Tyr	Pro	Val	Gln	Glu	705	710	715	720
Ala	Val	Ser	Gln	Phe	Asp	Leu	Ser	Leu	Asp	Ile	Lys	Arg	Ala	Asp	Asp	725	730	735	
Gly	Ser	Tyr	Arg	Gly	Ile	Leu	Asn	Tyr	Cys	Pro	Asp	Leu	Phe	Asp	Arg	740	745	750	
Arg	Arg	Met	Glu	Val	Leu	Val	Gly	His	Tyr	Leu	Thr	Leu	Leu	Gly	Ala	755	760	765	
Ala	Ala	Ala	Asp	Pro	Gly	Arg	Pro	Ile	Gly	Glu	Leu	Pro	Leu	Ser	Asp	770	775	780	
Gly	Ala	Glu	Arg	Leu	Arg	Leu	Leu	Asp	Gly	Phe	Gly	Lys	Arg	Asp	Ala	785	790	795	800
Ala	Tyr	Ala	Gly	Pro	Gly	Ser	Val	Pro	Glu	Arg	Phe	Ala	Glu	Val	Ala	805	810	815	
Arg	Thr	Ala	Pro	Asp	Ala	Arg	Ala	Val	Thr	Cys	Gly	Ala	Thr	Thr	Leu	820	825	830	
Thr	Phe	Ala	Glu	Leu	Asn	Asp	Arg	Val	Glu	Arg	Leu	Ala	Gln	Ala	Leu	835	840	845	
Leu	Gly	Ala	Gly	Val	Thr	Arg	Glu	Thr	Pro	Val	Ala	Val	Arg	Leu	Pro	850	855	860	
Arg	Ser	Thr	Asp	Ser	Val	Val	Ala	Leu	Leu	Ala	Val	Met	Arg	Ala	Gly	865	870	875	880
Gly	Val	Tyr	Val	Pro	Leu	Asp	Pro	Asp	Trp	Pro	Ala	Asp	Arg	Thr	Ala	885	890	895	

Tyr Ile Leu Asp Asp Thr Ala Ala Ser Val Val Ile Thr Arg Asp Leu
 900 905 910
 Pro Ala Leu Pro Gly Arg Leu His Val Asp Pro Arg Arg Pro Ala Ala
 915 920 925
 Asp Gly Leu Val Pro Ala Pro Arg Ile Asp Pro Asp Gln Ala Ala Tyr
 930 935 940
 Val Ile Tyr Thr Ser Gly Ser Thr Gly Ala Pro Lys Gly Val Val Val
 945 950 955 960
 Arg His Arg Ser Leu Asn His Leu Thr Ser Ala Leu Gln Ala Thr Phe
 965 970 975
 Leu Gly His Asp Pro Tyr Leu Ala Gly Ala Asp Gly Val Pro Pro Gly
 980 985 990
 Asp Ala Lys Leu Arg Thr Thr Leu Thr Ala Pro Phe Thr Phe Asp Ala
 995 1000 1005
 Ser Met Glu Gln Leu Ser Trp Met Leu Ala Gly His Glu Leu Phe Ile
 1010 1015 1020
 Val Pro Glu Asp Val Arg Arg Asp Pro Ser Ala Leu Val Arg Phe Val
 1025 1030 1035 1040
 Arg Glu His Arg Ile Asp Val Ile Asp Thr Thr Ser Ser Gln Leu Glu
 1045 1050 1055
 Leu Leu Val Ser His Gly Leu Leu Asp Gly Glu Trp Ala Pro Ser Met
 1060 1065 1070
 Val Met Val Gly Gly Glu Ala Val Ser Pro Ser Leu Trp Arg Thr Leu
 1075 1080 1085
 Arg Asp Gln Arg Arg Thr Arg Cys Phe Asn Leu Tyr Gly Pro Thr Glu
 1090 1095 1100
 Ala Thr Val Asp Ala Thr Cys His Asp Leu Ser Asp Pro Ala Asp Val
 1105 1110 1115 1120
 Pro Val Ile Gly Thr Pro Leu Pro His Thr His Val Arg Val Leu Asp
 1125 1130 1135
 Asp Arg Leu Arg Pro Val Pro Val Gly Val Ala Gly Glu Ile Tyr Leu
 1140 1145 1150
 Gly Gly Thr Gly Leu Ala Arg Gly Tyr Leu Asn Arg Pro Ala Leu Thr
 1155 1160 1165
 Ala Arg Arg Phe Val Ala Asp Pro Tyr Pro Asp Thr Pro Gly Ser Arg
 1170 1175 1180
 Leu Tyr Arg Thr Gly Asp Arg Ala Arg Trp Arg Pro Asp Gly Thr Leu
 1185 1190 1195 1200

Glu Tyr Leu Gly Arg Thr Asp Asp Gln Ile Lys Ile Arg Gly Phe Arg
 1205 1210 1215

Val Glu Pro Gly Glu Ile Glu Ala Val Leu Thr His His Pro Ala Val
 1220 1225 1230

Lys Glu Ala Ala Val Val Asp Asp Ala His Ala Arg Leu Val Ala Tyr
 1235 1240 1245

Val Thr Leu Ala Glu Gly Gly Gly Ala Gly Pro Thr Asp Val Arg Arg
 1250 1255 1260

Phe Ala Gln Gly Arg Leu Pro Ala His Met Val Pro Ser Ala Val Val
 1265 1270 1275 1280

Val Leu Glu Ala Leu Pro Leu Thr Ser Asn Gly Lys Leu Asp Arg Ala
 1285 1290 1295

Arg Leu Pro Ala Pro Ala Ala Gly Arg Pro Glu Leu Asp Val Arg Phe
 1300 1305 1310

Val Ala Pro Arg Asp Met Val Glu Glu Val Val Ala Gln Val Trp Cys
 1315 1320 1325

Ala Val Leu Gly Val Asp Arg Val Gly Val His Asp Asp Phe Phe Glu
 1330 1335 1340

Leu Gly Gly His Ser Leu Leu Val Val Gln Val Met Thr Arg Ile Arg
 1345 1350 1355 1360

Lys Leu Leu Gly Val Glu Val Pro Leu Arg Glu Leu Phe Asp Ala Ala
 1365 1370 1375

Thr Val Glu Glu Leu Ala Ala Arg Val Arg Ala Ala Arg Thr Glu Gly
 1380 1385 1390

Leu Gly Arg Gly Ala Ala Pro Pro Leu Gly Pro Val Asp Arg Ser Gly
 1395 1400 1405

Pro Leu Pro Leu Ser Phe Ala Gln Gln Arg Leu Trp Tyr Leu Asp Gln
 1410 1415 1420

Leu Ala Pro Asp Ser Val Ser Tyr Asn Met Cys Asp Ala Tyr Arg Val
 1425 1430 1435 1440

Arg Gly Pro Leu Asp Leu Asp Ala Leu Arg Arg Ala Leu Arg Thr Leu
 1445 1450 1455

Val Glu Arg His Glu Thr Leu Arg Thr Ala Phe Val Glu Arg Asp Gly
 1460 1465 1470

Val Pro His Gln Val Val Ser Ala Pro Asp Ala Pro Ala Ala Arg Arg
 1475 1480 1485

Ala Ala Glu Val Val Arg Ile Glu Ala Ala Gly Arg Thr Asp Glu Ala
 1490 1495 1500

Val Arg Asp Leu Val Ala Ala Glu Ala Arg Thr Pro Phe Arg Pro Ala
 1505 1510 1515 1520
 Asp Gly Ala Leu Met Arg Val Ala Val Ala Arg Leu Ala Asp Asp Asp
 1525 1530 1535
 His Val Leu Val Val Thr Thr His His Ile Val Ser Asp Gly Trp Ser
 1540 1545 1550
 Val Asp Ile Leu Val Asp Glu Leu Gly Arg Leu Tyr Arg Glu His Val
 1555 1560 1565
 Thr Gly Asp Pro Ala Gly Leu Pro Pro Leu Asp Val Gln Tyr Ala Asp
 1570 1575 1580
 Phe Ala Val Trp Gln Arg Ser Trp Met Thr Gly Pro Val Arg Glu Glu
 1585 1590 1595 1600
 His Leu Ala Tyr Trp Lys Arg Ala Leu Asp Gly Ala Pro Ser Val Leu
 1605 1610 1615
 Arg Leu Pro Ala Asp His Pro Arg Pro Ala Val Gln Ser Gln Arg Gly
 1620 1625 1630
 Glu Thr Val Glu Phe Pro Leu Pro Ala Pro Leu Val Ala Arg Leu Glu
 1635 1640 1645
 Ala Leu Cys Arg Glu Gln Gly Val Thr Leu Phe Met Ala Leu Phe Gly
 1650 1655 1660
 Ala Phe Gln Val Leu Leu Ala Arg Tyr Ser Gly Gln Asp Asp Val Val
 1665 1670 1675 1680
 Val Gly Val Pro Thr Ala Asn Arg Thr Arg Ala Glu Thr Glu Pro Leu
 1685 1690 1695
 Val Gly Phe Phe Val Asn Thr Leu Pro Val Arg Val Ala Cys Ser Pro
 1700 1705 1710
 Glu Leu Ser Phe Arg Ala Leu Leu Asp Arg Val Arg Glu Ala Ala Leu
 1715 1720 1725
 Gly Ala Phe Ala His Gln Asp Leu Pro Phe Glu Ala Leu Val Glu Ala
 1730 1735 1740
 Leu Ala Pro Glu Arg Asp Leu Gly His His Pro Leu Val Gln Val Thr
 1745 1750 1755 1760
 Phe Gln Leu Leu Asp Ala Pro Asp Glu Arg Leu Val Leu His Gly Thr
 1765 1770 1775
 Asp Cys Val Ser Leu Gly Phe Gly Gly Val Thr Ser Arg Phe Asp Leu
 1780 1785 1790
 Ser Leu Asp Val Val Ser Gly Arg Arg Gly Lys Arg Cys Val Leu Thr
 1795 1800 1805

Tyr Cys Pro Asp Leu Phe Asp Arg Pro Arg Met Glu Val Leu Ala Gly
 1810 1815 1820
 His Tyr Leu Thr Leu Leu Gly Ala Ala Ala Asp Asp Pro Gly Leu Arg
 1825 1830 1835 1840
 Val Gly Asp Leu Pro Leu Ser Asp Asp Val Glu Arg Leu Arg Leu Leu
 1845 1850 1855
 Gly Gly Ser Arg Pro Arg Tyr Leu Pro Ala Pro Gly Ala Glu Thr Val
 1860 1865 1870
 Pro Asp Ala Phe Ala Ala Gln Val Arg Ala Thr Pro Asp Ala Pro Ala
 1875 1880 1885
 Leu Val His Gly Asp Ser Thr Leu Thr Phe Ala Glu Leu Asp Thr Arg
 1890 1895 1900
 Val Thr Ala Leu Ala Val Arg Leu Arg Arg Cys Gly Val Ala Ala Glu
 1905 1910 1915 1920
 Thr Pro Val Ala Val Cys Leu Pro Arg Ser Ala Asp Ala Val Val Ala
 1925 1930 1935
 Leu Leu Ala Val Leu Arg Ala Gly Gly Val Tyr Val Pro Val Asp Pro
 1940 1945 1950
 Glu Trp Pro Ser Gly Arg Val Ala His Val Leu Asp Glu Thr Ala Ala
 1955 1960 1965
 Pro Val Val Ile Thr Arg Asp Leu Pro Ala Asp Pro Gly Arg Val His
 1970 1975 1980
 Leu Asp Pro Arg Gln Ala Pro Ala Asp Asp Arg Asp Pro Leu Pro Arg
 1985 1990 1995 2000
 Leu His Arg Asp Gln Ala Ala Tyr Ile Ile Phe Thr Ser Gly Ser Thr
 2005 2010 2015
 Gly Ala Pro Lys Gly Val Val Val Arg His Gly Ser Leu Tyr His Leu
 2020 2025 2030
 Leu Gly His Val Arg Arg Met Ala Glu Gly Gly Pro Arg Arg Asn Val
 2035 2040 2045
 Ala His Thr Thr Ala Met Thr Phe Asp Pro Ser Leu Glu Gln Phe Leu
 2050 2055 2060
 Trp Leu Val Ala Gly His Thr Leu His Val Ala Pro Glu Glu Val Arg
 2065 2070 2075 2080
 Arg Asp Pro Glu Ala Leu Val Ala Leu Val Arg Arg Ala Ala Ile Asp
 2085 2090 2095
 Val Leu Asn Val Thr Pro Ser His Leu Thr Leu Leu Ile Glu Ala Gly
 2100 2105 2110

Leu Leu Glu Gly Asp Arg Val Pro Gly Thr Val Leu Val Gly Gly Glu
 2115 2120 2125
 Ala Val Pro Ala Ala Leu Trp Arg Thr Leu Arg Glu Arg Thr Gly Ala
 2130 2135 2140
 Thr Arg Phe Phe Asn Leu Tyr Gly Pro Thr Glu Ala Thr Val Asp Ala
 2145 2150 2155 2160
 Thr Cys His Asp Leu Ser Asp Pro Ala Asp Val Pro Val Ile Gly Thr
 2165 2170 2175
 Pro Leu Pro His Thr His Val Arg Val Leu Asp Asp Arg Leu Arg Pro
 2180 2185 2190
 Val Pro Val Gly Val Ala Gly Glu Ile Tyr Leu Gly Gly Thr Gly Leu
 2195 2200 2205
 Ala Arg Gly Tyr Leu Asn Arg Pro Ala Leu Thr Ala Gln Arg Phe Val
 2210 2215 2220
 Ala Asp Pro Tyr Pro Asp Thr Pro Gly Ser Arg Leu Tyr Arg Thr Gly
 2225 2230 2235 2240
 Asp Arg Ala Arg Trp Arg Pro Asp Gly Thr Leu Glu Tyr Leu Gly Arg
 2245 2250 2255
 Thr Asp Asp Gln Ile Lys Ile Arg Gly Phe Arg Val Glu Pro Gly Glu
 2260 2265 2270
 Ile Glu Ala Val Leu Thr His His Pro Ala Val Lys Glu Ala Ala Val
 2275 2280 2285
 Thr Val Ala Thr Asp Asp Gly Ala Ala Arg Leu Val Ala Leu Val Val
 2290 2295 2300
 Pro Ala Pro Arg Ala Pro His Gly Asp Ser Ala Asp Gly Ala Pro Asp
 2305 2310 2315 2320
 Ala Gln Val Glu Glu Trp Asn Ala Val Phe Glu Ala Thr His Thr Asp
 2325 2330 2335
 Ala Ala Asp Gly Glu Leu Thr Phe Asn Ile Lys Gly Trp Asn Asp Ser
 2340 2345 2350
 Leu Thr Gly Ala Pro Ile Pro Ala Glu His Met Arg Glu Trp Val Asp
 2355 2360 2365
 Thr Thr Val Ala Arg Leu Leu Glu Arg Pro Ala Glu Arg Val Leu Glu
 2370 2375 2380
 Ile Gly Ser Gly Thr Gly Leu Leu Met Trp Arg Leu Leu Pro His Val
 2385 2390 2395 2400
 Thr Glu Tyr Thr Gly Thr Asp Phe Ser Arg Pro Ala Val Asp Trp Leu
 2405 2410 2415

Arg Asp Gly Leu Arg Arg Arg Pro Ala His Arg Val Arg Leu Leu His
 2420 2425 2430
 Arg Glu Ala Thr Asp Phe Thr Gly Val Arg Ala Ala Ser Thr Asp Leu
 2435 2440 2445
 Val Val Val Asn Ser Val Val Gln Tyr Phe Pro Asp Arg Ala Tyr Leu
 2450 2455 2460
 Asp Thr Val Leu Ala Arg Ala Leu Asp Ala Thr Ala Asp Arg Gly Arg
 2465 2470 2475 2480
 Val Phe Val Gly Asp Val Arg Asn Leu Ala Leu Ala Pro Gln Phe Tyr
 2485 2490 2495
 Ala Arg Gln Ala Leu Ala His Ala Gly Pro Gly Ala Ala Ala Arg Asp
 2500 2505 2510
 Val Ala Arg Ala Ala Gly Glu Phe Ala Ala Met Asp Gly Glu Leu Leu
 2515 2520 2525
 Val Ser Pro Ala Tyr Phe Ala Ala Leu Ala Ala Arg Ser Pro Arg Val
 2530 2535 2540
 Thr Gly Val Glu Ile Leu Pro Arg Arg Gly Arg His Arg Asn Glu Met
 2545 2550 2555 2560
 Ser Leu Tyr Arg Tyr Asp Val Val Leu His Val Gly Gly Asp Arg Pro
 2565 2570 2575
 Ala Ala Pro Glu Ala Glu Val Leu Thr Trp Gly Asp Gln Val His Asp
 2580 2585 2590
 Leu Ala Ser Leu Ser Ala Arg Leu Gly Arg Gly Gly Pro Asp Ala Leu
 2595 2600 2605
 Leu Val Arg Gly Val Ala Asn Asp Arg Leu Thr Arg Asp Asn Glu Leu
 2610 2615 2620
 Leu Asp Ala Pro Ala Arg Thr Thr Ala Val Glu Pro Glu Asp Leu Trp
 2625 2630 2635 2640
 Gly Leu Ala Asp Ser Thr Pro Tyr Arg Val Ser Val Ser Trp Ala Ala
 2645 2650 2655
 Ala Asp Pro Arg Gly Ala Met Asp Val Leu Leu Val Arg Arg Asp Ala
 2660 2665 2670
 His Asp Asp Gly Pro Leu Leu Val Pro His Pro Val Pro Glu Pro Ser
 2675 2680 2685
 Ala Pro Leu Thr Asn Thr Pro Thr Arg His Pro Ser Ala Arg Gln Gly
 2690 2695 2700
 Gly Ser Ala Ala Asp Gly Leu Arg Ser Trp Leu Ala Glu Arg Leu Pro
 2705 2710 2715 2720

Ala	His	Leu	Leu	Pro	Ala	Arg	Ile	Thr	Glu	Val	Asp	Ala	Leu	Pro	Arg	2725	2730	2735	
Thr	Gly	Thr	Gly	Lys	Leu	Asp	Arg	Gly	Ala	Leu	Gly	Gly	Leu	Val	Thr	2740	2745	2750	
Ala	Gly	Arg	Gly	Ala	Arg	Ala	Gly	Asp	Arg	Pro	Ala	Thr	Ala	Pro	Arg	2755	2760	2765	
Thr	Gly	Leu	Glu	Arg	Thr	Leu	Ala	Asp	Ala	Trp	Ala	Arg	Val	Leu	Gly	2770	2775	2780	
Leu	Pro	Glu	Val	Gly	Val	His	Glu	Asn	Phe	Phe	Ala	Leu	Gly	Gly	Asp	2785	2790	2795	2800
Ser	Leu	Leu	Ala	Val	Arg	Ala	Val	Ala	Arg	Cys	Arg	Arg	Ala	Gly	Val	2805	2810	2815	
Arg	Leu	Thr	Val	Arg	Gln	Leu	Leu	Ser	Glu	Gln	Thr	Val	Ala	Ala	Leu	2820	2825	2830	
Ala	Ala	Ala	Leu	Glu	Glu	Glu	Ser	Gln								2835	2840		

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<210> 118
<211> 451
<212> PRT
<213> Streptomyces verticillus
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<220>
<223> ORF33

<400>	118															
Met	Met	Lys	Ser	Ser	Arg	Leu	Arg	Asp	Arg	Gln	Leu	Gly	Gly	Glu	Asp	
1				5					10					15		
Pro	Val	Val	Ala	Gln	Glu	Ser	Pro	Gln	Asp	Ala	Gly	Pro	Thr	Pro	Cys	
			20					25					30			
Gln	Gly	Asp	Asp	Gly	Leu	Asn	Val	Phe	Ala	Ala	Leu	Ala	Ala	Leu	Leu	
		35					40					45				
Glu	Val	Glu	Val	Pro	Val	Arg	Pro	Leu	Pro	His	His	Ala	Gly	Leu	Gly	
	50					55					60					
Arg	His	Val	Glu	His	Ser	Ser	Gln	Ala	Ala	Ala	Val	Ala	Leu	Gly	Pro	
65					70					75					80	
Met	Gln	Val	Ala	Ser	Ala	Thr	Thr	Gly	Val	Ala	Gly	Asp	Gly	His	Gln	
				85					90					95		
Ala	Gly	Arg	Arg	Gly	Gln	Val	Thr	Gly	Val	Gly	Val	Gly	Arg	Glu	Val	
			100					105					110			
Ala	Gly	Gly	Asp	Asp	Glu	Leu	Gly	Ala	Glu	Asp	Arg	Pro	His	Ala	Arg	
		115					120					125				

Gln Arg Leu Asp Asp Leu Gly Leu Trp Met Ala Ala Glu Arg Leu Ala
 130 135 140
 Asp Leu Leu Val Asn Pro Leu Gln Thr Val Val Gln Gly Gln Asp Leu
 145 150 155 160
 Arg Gly Gln Val Ser His Asp Leu Gly Gly Asp Val Leu Pro Gly Gln
 165 170 175
 Arg Gly Leu Leu Ser Leu Gly Ser Leu Gln Arg Arg Arg Gly Asp Gly
 180 185 190
 Val Gly Thr Ala His Ala Ser Val Gly Gln Pro Gly Arg Gln Pro Gly
 195 200 205
 Pro Ala Ala Ala Ala Glu Ser Cys Arg Gly Leu Val Ala Arg Gln Gln
 210 215 220
 Asp Gln Arg Ala Leu Leu Arg Ala Val Val Glu Gly Pro Phe Gln Arg
 225 230 235 240
 Gly Glu Asp Ala Gly Gln Arg Val Ala Glu Thr Val Asp His Pro Asp
 245 250 255
 Pro Val Gly His Glu Val Gly Thr Val Gly Gly Gln Gln Arg Glu Val
 260 265 270
 Gly Gly Gln Leu Gly Gly His Val Asp Arg Arg Glu Val Pro Ser Val
 275 280 285
 Ala Gly Gly Phe Gly Asp Asp Val Gly Val Ala Gly Val Gly Leu Arg
 290 295 300
 Leu Ala Pro Val Ser Ala Gly His Ala Val Asp Arg Ala Ala Gly His
 305 310 315 320
 Val Asp Gly Leu Leu Ala Val Gly Arg Glu Gln Gly Gln Gln Gln Arg
 325 330 335
 Gly Gly Arg Ala Gly Asp Val His Cys Pro Val Asp Leu Val Gly Gln
 340 345 350
 Val Glu Asp Leu Thr His Gly Gly Gln Asp Arg Arg Leu Ile Val Ala
 355 360 365
 Asp Leu Leu Arg Pro Gln Arg His Thr Gly Leu Val Asp His Arg Arg
 370 375 380
 Pro Val Met Pro Leu Ala Arg Val Asp Pro Gly Pro Asp Pro Gly Pro
 385 390 395 400
 Ser Leu Ala His Ser Pro Leu Leu Thr Pro Asn Ser Ile Pro Ser Thr
 405 410 415
 Arg Gly Thr Pro Arg Cys His Leu Arg Lys Lys Arg Pro Lys Arg Thr
 420 425 430

Ser Gln Ser Ala Ala Arg Ala Pro Arg Arg Thr Gly Arg Pro Leu Leu
 435 440 445

Val Ser His
 450

<210> 119
 <211> 337
 <212> PRT
 <213> Streptomyces verticillus

<220>
 <223> ORF34

<400> 119
 Met Thr Asp Leu Pro Leu Arg Thr Val Ala Leu Thr Gly Glu Glu Ser
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 Ala Glu Val Asp Asp Leu Leu Arg Thr Leu Ala Asp Val Pro Val Asp
 20 25 30
 Ser Thr Val Gly Leu Leu His Arg Thr Arg Leu Ala Ala Gln Glu Leu
 35 40 45
 Pro Leu Arg Ile Arg Ala Glu Leu Thr Gly Met Arg Leu Tyr Asp Ser
 50 55 60
 Pro Arg Ala Leu Val Val Thr Gly Phe Gly Val Asp Asp Glu Arg Ile
 65 70 75 80
 Gly Pro Thr Pro Ala Ala Arg Pro Ala Pro Asp Pro Glu Arg Thr Arg
 85 90 95
 Asp Leu Glu Leu Leu Leu Leu Leu His Ala Ala Leu Leu Gly Glu Ala
 100 105 110
 Phe Gly Trp Ala Thr Gln Gln Asn Gly Arg Leu Val His Asp Val Leu
 115 120 125
 Pro Val Pro Gly Glu Glu Thr Ala Gln Met Gly Ser Ser Ser Glu Thr
 130 135 140
 Glu Leu Leu Trp His Thr Glu Asp Ala Phe His Pro Leu Arg Cys Asp
 145 150 155 160
 Tyr Val Gly Leu Leu Cys Leu Arg Asn His Gln Arg Ala Ala Thr Thr
 165 170 175
 Val Gly Trp Pro Asp Leu Ser Arg Leu Thr Thr Glu Asp Arg Ala Val
 180 185 190
 Leu Leu Glu Pro Arg Tyr Leu Ile Arg Pro Asp Thr Ser His Thr Pro
 195 200 205
 Ala Gln Asn Ala Thr Gly Thr Arg Ser Ala Glu Arg Phe Ala Ala Ile
 210 215 220

Ala Glu Met Asp Asp Ala Pro Glu Arg Val Ala Val Leu Phe Gly Asp
 225 230 235 240

Pro Glu Asp Pro Tyr Leu Arg Ile Asp Pro Ala Tyr Met Ser Pro Ala
 245 250 255

Pro Gly Asp Ala Ala Ala Arg Arg Ala Tyr Asp Thr Val Thr Ala Leu
 260 265 270

Ile Glu Asp Glu Leu Arg His Val Val Leu Asp Ala Gly Ser Leu Leu
 275 280 285

Leu Val Asp Asn Tyr Gln Ala Val His Gly Arg Lys Pro Phe Ala Ala
 290 295 300

Ala Tyr Asp Gly Arg Asp Arg Trp Leu Lys Arg Val Asn Ile Thr Arg
 305 310 315 320

Asp Leu Arg Arg Ser Arg Ser Ala Arg Arg Ser Ala Thr Ser Leu Leu
 325 330 335

Val

<210> 120
 <211> 250
 <212> PRT
 <213> Streptomyces verticillius

<220>
 <223> ORF35

<400> 120
 Met Asp Phe Pro Leu Thr Arg Val Asn Pro Trp Phe Ser Gly Gly Cys
 1 5 10 15

Asp Gly Arg Pro Arg Val Arg Leu Cys Ala Leu Pro Tyr Ala Gly Gly
 20 25 30

Thr Ala Ala Val Phe Lys Asp Trp Pro Ala Ala Leu Pro Pro Gly Val
 35 40 45

Glu Leu Leu Thr Ala His Leu Pro Gly Arg Gly Asp Arg Phe Thr Glu
 50 55 60

Pro Pro Pro Ala Thr Leu Glu Glu Thr Ala Glu Arg Leu Cys Glu Ala
 65 70 75 80

Leu Pro Pro Ser Asp Leu Pro Thr Val Val Leu Gly His Ser Met Gly
 85 90 95

Ala Leu Leu Gly Tyr Glu Val Ala Ala Arg Leu Ala Ala Arg Gly Arg
 100 105 110

Ala Pro Asn Leu Leu Ile Ala Ala Ala Cys Arg Pro Pro His Val Pro
 115 120 125

Pro Asp Ala Ser Gly Pro Val Thr Glu Ala Glu Leu Ala Ala Thr Leu
 130 135 140

Arg Ala Glu Arg Pro Trp Asp Thr Ala Leu Arg Asp Glu Glu Leu Met
 145 150 155 160

Glu Ala Val Leu Pro Ala Leu Val Ala Asp Ile Thr Ala Gly Asp Arg
 165 170 175

Tyr His Arg Pro Arg Pro Arg Pro Leu Asp Leu Pro Leu Lys Val Tyr
 180 185 190

Ile Gly Ala Asp Asp Asp Gly Thr Asp Trp Arg Thr Thr Leu Gly Trp
 195 200 205

Arg Ala Cys Thr Ala Arg Asp Cys Glu Val Val Val Leu Pro Gly Gly
 210 215 220

His Tyr Phe Leu Glu Thr Asp Arg Ala Ala Val Leu Thr Arg Val Ala
 225 230 235 240

Thr Asp Leu Ala Glu Ala Glu Val Gly Ala
 245 250

<210> 121

<211> 427

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF36

<400> 121

Met Thr Ala Arg Val Asp Ala Thr Pro Thr Tyr Leu Ala Val Leu Ala
 1 5 10 15

Val Arg Glu Ala Arg Ala Pro Leu Leu Gly Ser Cys Leu Ala Arg Met
 20 25 30

Ser Phe Ala Val Leu Pro Leu Ala Leu Leu Leu Ser Val Arg Asp Ala
 35 40 45

Thr Gly Ser Phe Ala Val Ala Gly Leu Thr Ser Gly Ala Leu Ser Ala
 50 55 60

Thr Leu Thr Leu Phe Ala Pro Ala Arg Ala Arg Leu Ile Asp Arg Arg
 65 70 75 80

Gly Ser Arg Ser Gly Leu Val Arg Leu Thr Val Pro Tyr Leu Leu Gly
 85 90 95

Leu Ala Val Leu Ile Thr Leu Ala Glu Ala Glu Ala Pro Thr Ala Ala
 100 105 110

Leu Leu Val Ala Ala Ala Val Ala Gly Val Phe Ala Pro Pro Leu Gly
 115 120 125

Pro	Thr	Met	Arg	Val	Leu	Trp	Ala	Arg	Ile	Leu	His	Gly	Arg	Gln	Pro
130						135					140				
Leu	Leu	His	Thr	Ala	Tyr	Ala	Leu	Asp	Ser	Val	Thr	Glu	Glu	Val	Val
145					150					155					160
Phe	Thr	Val	Gly	Pro	Leu	Leu	Ala	Gly	Gly	Leu	Ile	Ala	Val	Ala	Ala
				165					170					175	
Pro	Leu	Ala	Ser	Met	Ile	Thr	Val	Met	Val	Leu	Ile	Ala	Ala	Gly	Thr
			180					185						190	
Ala	Cys	Phe	Val	Leu	Ser	Ala	Ala	Thr	Ala	Ala	Ala	Pro	Ala	Ser	Gly
		195					200						205		
Glu	Ala	Asp	Glu	Asp	Arg	Pro	His	Gly	Arg	Pro	Met	Ala	Leu	Pro	Gly
	210					215					220				
Met	Arg	Thr	Ile	Val	Leu	Ser	Phe	Gly	Gly	Val	Gly	Leu	Val	Val	Gly
225					230					235					240
Val	Leu	Gln	Val	Val	Leu	Pro	Phe	Ile	Ala	Asp	His	Ala	Gly	Ser	Pro
				245					250					255	
Gly	Ala	Gly	Gly	Ile	Leu	Leu	Ser	Met	Leu	Ser	Ala	Gly	Ser	Ala	Val
			260					265					270		
Gly	Gly	Leu	Ala	Tyr	Gly	Arg	Ile	Ala	Trp	Arg	Ser	Thr	Pro	Val	Arg
		275					280					285			
Arg	Phe	Val	Val	Leu	Val	Thr	Gly	Phe	Thr	Leu	Ala	Val	Leu	Pro	Leu
	290					295					300				
Cys	Leu	Thr	Ala	Ser	Pro	Val	Pro	Ala	Gly	Ala	Phe	Ala	Leu	Leu	Val
305					310					315					320
Gly	Leu	Cys	Leu	Ala	Pro	Leu	Phe	Thr	Thr	Ala	Tyr	Leu	Leu	Val	Asn
				325					330					335	
Asp	Leu	Val	Thr	Ala	Ser	Gly	Thr	Ala	Pro	Thr	Glu	Ala	Asn	Thr	Trp
			340					345					350		
Val	Ser	Thr	Ala	Asn	Asn	Gly	Gly	Phe	Ala	Ala	Gly	Ser	Ala	Ala	Ala
		355					360					365			
Gly	Val	Leu	Leu	Asp	Ser	Arg	Gly	Pro	Thr	Val	Thr	Val	Thr	Ala	Ala
	370					375					380				
Phe	Ala	Val	Ala	Ala	Ala	Thr	Ala	Val	Met	Thr	Val	Leu	Arg	Arg	Arg
385					390					395					400
Thr	Leu	Leu	Leu	Gly	Ala	Gly	His	Pro	Glu	Pro	Ala	Ala	Ala	Thr	Pro
				405					410					415	
Ala	Asp	Arg	Thr	Ala	Pro	Ala	Glu	Ala	Glu	Glu					
			420				425								

<210> 122

<211> 272

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF37

<400> 122

Met Ser Lys Asn Ala Ala His Trp Ser Arg Ile Arg Thr Gly Asp Ala
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Pro Gly Val Val Leu Ala Val Asp Phe Tyr Gly Thr Gly Arg Gln Glu
 20 25 30

Ala Thr Phe Arg His Leu Cys Asp Leu Leu Thr Asp Pro Val Glu Val
 35 40 45

Trp His Ala Val Pro Pro Ala Pro Asp Gly Asp Trp Ser Thr Ala Thr
 50 55 60

Gly Ala Gly His Leu Arg Trp Trp Thr Glu Gly Leu Asp Thr Val Leu
 65 70 75 80

Ala Gly Arg Pro Val Arg Ala Leu Val Gly Tyr Cys Ala Gly Gly Val
 85 90 95

Phe Ala Ser Ala Leu Ala Asp Ala Leu Val Glu Arg Glu Gly His Arg
 100 105 110

Pro Arg Val Val Leu Phe Asn Pro Ser Ala Pro Gly Val Ala Thr Leu
 115 120 125

Thr Arg Asp Phe Arg Gly Leu Ile Ala Gly Met Asp Leu Leu Thr Asp
 130 135 140

Gly Glu Arg Ala Ala Leu Leu Ala Glu Thr Thr Ala Ile Arg Arg Ala
 145 150 155 160

His Ala Pro Asp Ala Leu Val Pro Val Ala Glu Arg Tyr Ala Ala Leu
 165 170 175

Tyr Arg Glu Gly Cys Asp Leu Leu Cys Glu Arg Leu Gly Val Asp Ala
 180 185 190

Ser Phe Gly Ala Glu Leu Ala Ala Val Leu His Ser Tyr Leu Ala Tyr
 195 200 205

Leu Thr Ala Ala Leu Asp Val Pro Pro Thr Pro Leu Trp Arg Gly Ala
 210 215 220

Val Ser Leu Thr Ser Arg Glu His Gln Gly Thr Asp Phe Thr Asp Val
 225 230 235 240

Glu His Gly Phe Asp Val Ala Arg Ala Glu Leu Leu Ser Ser Pro Gln
 245 250 255

Val Val Ala Ala Leu Thr Ala Leu Leu Arg Glu His Glu Ala Ser Arg
 260 265 270

<210> 123

<211> 578

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF38

<400> 123

Met Thr Leu Thr Leu Arg Asp Ala Phe Leu Asp Gln Ala Ala Arg Thr
 1 5 10 15

Pro Asp Ala His Ala Val Val His Gly Asp Thr Val Trp Thr Tyr Arg
 20 25 30

Glu Leu Glu Leu Arg Ala Gly Arg Met Ala Arg Thr Leu Ala Ala Arg
 35 40 45

Gly Ala Gly Pro Gly Thr Leu Val Ala Val Arg Leu Pro Arg Gly Pro
 50 55 60

Glu Pro Val Ala Ala Leu Leu Ala Val Val Leu Thr Gly Ala Gly Tyr
 65 70 75 80

Val Pro Leu Ala Asp Asp Asp Pro Pro Asp Arg Cys Arg His Ile Leu
 85 90 95

Asp Asp Cys Ala Ala Ala Leu Leu Leu Ala Glu His Pro Ser Arg Asp
 100 105 110

Gly Arg Thr Leu Thr Pro Asp Glu Ala Leu Ala Pro Ala Arg Pro Phe
 115 120 125

Asp Ala Ala Pro Val Arg Ala Gly Asp Pro Ala Tyr Val Ile Tyr Thr
 130 135 140

Ser Gly Ser Ser Gly Arg Pro Lys Gly Val Leu Val Glu Gln Gly Ala
 145 150 155 160

Leu Gly Ala Tyr Leu Ala Gln Ala Arg Ala Arg Tyr Asp Gly Leu Ser
 165 170 175

Gly Arg Thr Val Leu His Ser Ser Leu Ser Phe Asp Met Ala Val Thr
 180 185 190

Ser Leu Trp Gly Pro Leu Val Ser Gly Gly Ala Ile His Val Leu Asp
 195 200 205

Leu Lys Ala Ile Ala Ser Gly Thr Gln Pro Pro Pro Ala Ala Ser Ala
 210 215 220

Arg Pro Ser Phe Leu Lys Val Thr Pro Ser His Leu Pro Leu Leu Gly
 225 230 235 240

Leu	Leu	Pro	Asp	Ser	Cys	Leu	Pro	Thr	Gly	Gln	Leu	Val	Ile	Gly	Gly	245	250	255
Glu	Ala	Leu	Thr	Gly	Ser	Ala	Leu	Gly	Pro	Trp	Arg	Ala	Ala	His	Pro	260	265	270
Asp	Val	Thr	Val	Val	Asn	Glu	Tyr	Gly	Pro	Thr	Glu	Ala	Thr	Val	Gly	275	280	285
Cys	Cys	Ala	Tyr	Thr	Val	Arg	Pro	Gly	Asp	Ala	Val	Asp	Pro	Gly	Ala	290	295	300
Val	Pro	Ile	Gly	Arg	Pro	Phe	Ala	Gly	Thr	Arg	Leu	Tyr	Val	Leu	Asp	305	310	315
Ala	Asp	Gly	Glu	Pro	Val	Ala	Val	Gly	Gly	Val	Gly	Glu	Leu	His	Ile	325	330	335
Ala	Gly	Asp	Gln	Leu	Ala	Arg	Gly	Tyr	Leu	Gly	Arg	Pro	Arg	Leu	Thr	340	345	350
Glu	Glu	Arg	Phe	Val	Pro	Asp	Pro	Phe	Ala	Ala	Asp	Gly	Ser	Arg	Met	355	360	365
Tyr	Arg	Thr	Gly	Asp	Leu	Val	Arg	Glu	Arg	Pro	Asp	Gly	Asp	Leu	Glu	370	375	380
Tyr	Leu	Gly	Arg	Ala	Asp	Gly	Gln	Val	Lys	Val	Ser	Gly	Tyr	Arg	Ile	385	390	395
Glu	Pro	Gly	Glu	Ile	Glu	Ala	Val	Leu	Arg	Gly	His	Ala	Gly	Val	Arg	405	410	415
Asp	Cys	Ala	Val	Val	Ala	Val	Gly	Glu	Ala	Asp	Ala	Arg	Arg	Leu	Val	420	425	430
Ala	Tyr	Val	Val	Pro	Asp	Pro	Asp	Ser	Pro	Pro	Gly	Thr	Ala	Ala	Pro	435	440	445
Ala	Arg	His	Ala	Ala	Glu	Ala	Leu	Pro	Pro	Tyr	Met	Val	Pro	Ala	Thr	450	455	460
Phe	Val	Thr	Val	Pro	Glu	Leu	Pro	Leu	Thr	Pro	Asn	Gly	Lys	Leu	Asp	465	470	475
Arg	Asp	Ala	Leu	Pro	Gly	Pro	Pro	Ala	Gly	Asp	Ala	Gly	Pro	Gly	Asp	485	490	495
Arg	Thr	Pro	Ala	Glu	Thr	Leu	Leu	Cys	Glu	Leu	Leu	Ala	Arg	Ala	Leu	500	505	510
Gly	Ile	Pro	Glu	Ile	Asp	Ala	Asp	Ala	Asp	Phe	Leu	Thr	Ser	Gly	Gly	515	520	525
Thr	Ser	Ile	Thr	Ala	Leu	Lys	Leu	Val	Ala	Gly	Ala	Arg	Arg	Val	Gly	530	535	540

Ile Arg Leu Glu Leu Thr Thr Val Leu Arg Glu Arg Thr Val Arg Arg
 545 550 555 560

Ile Leu Ala Ala Gln Pro Asp Ala Ala Ser Pro Leu Ala Glu Gly Val
 565 570 575

Pro Glu

<210> 124

<211> 328

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF39

<400> 124

Met Thr Gly Ser Val Thr Leu Thr Pro Leu Gly Gly Ile Ile Pro Arg
 1 5 10 15

Pro Arg Gly Glu Gly Leu Thr Thr Gly Ala Glu Tyr Asp Leu Gly Pro
 20 25 30

Leu Gly Asp Ala Gly Pro Asp Trp Val Arg Ala His Gly Pro Arg Leu
 35 40 45

Arg Glu Arg Leu Ala Thr Asp Gly Leu Ile Leu Leu His Gly Leu Pro
 50 55 60

Thr Asp Gly Asp Gly Val Asp Gly Phe His Asp Val Val Gly Ser Val
 65 70 75 80

Gly Gly Asp Pro Leu Pro Tyr Thr Glu Arg Ser Thr Pro Arg Ser Val
 85 90 95

Val Lys Gly Asn Ile Tyr Thr Ser Thr Glu Tyr Pro Ala Asp Gln Pro
 100 105 110

Ile Pro Met His Asn Glu Asn Ser Tyr Ala Ala His Trp Pro Ser Thr
 115 120 125

Leu Tyr Phe Phe Cys His Thr Ala Pro Asp Thr Gly Gly Ala Thr Pro
 130 135 140

Ile Ala Asp Gly Arg Ala Val Leu Asp Leu Ile Pro Ala Glu Val Arg
 145 150 155 160

Arg Arg Phe Ser Gln Gly Val Val Tyr Thr Arg Thr Phe Arg Ala Asp
 165 170 175

Met Gly Leu Ser Trp Gln Glu Ala Phe Gln Thr Glu Asp Arg Gly Asp
 180 185 190

Val Glu Arg His Cys Arg Ala His Gly Gln Glu Phe Ser Trp Asp Gly
 195 200 205

Asp Val Leu Arg Thr Arg His His Arg Pro Ala Thr Ala Val Asp Pro
 210 215 220
 Gly Thr Gly Ala Glu Val Trp Phe Asn Gln Ala His Leu Phe His Pro
 225 230 235 240
 Ser Ser Leu Asp Pro Asp Leu Arg Gln Val Leu Leu Glu Thr Tyr Gly
 245 250 255
 Glu Asn Gly Leu Pro Arg Asp Ala Leu Phe Ala Asp Gly Thr Pro Ile
 260 265 270
 Pro Asp Ala Asp Leu Ala Thr Val Arg Ala Ala Tyr Thr Arg Ala Ala
 275 280 285
 Leu Ala Leu Pro Trp Arg Glu Gly Asp Ile Met Leu Val Asp Asn Leu
 290 295 300
 Arg Met Ala His Gly Arg Glu Pro Phe Thr Gly Glu Arg Arg Val Leu
 305 310 315 320
 Val Ala Met Thr Ser Ala Asp Ser
 325

<210> 125

<211> 337

<212> PRT

<213> *Streptomyces verticillus*

<220>

<223> ORF40

<400> 125

Met Thr Glu Val Arg Gly Glu Leu Ile Arg Ala Leu Pro Gly Val Leu
 1 5 10 15
 Glu Ala Arg Ala Ala Arg Ala Gly His Thr Thr Ala Phe Leu Asp Ala
 20 25 30
 Arg Arg Cys Val Thr Tyr Arg Glu Leu Glu Ala Arg Thr Arg Arg Leu
 35 40 45
 Ala Gly Ser Pro Gly Ala Val Gly Gly Ala Gln Gly Gln Thr Gly Trp
 50 55 60
 Arg Ser Ser Met Gly Asn Arg Gly Gly Asp Gly Gly Gly Phe Pro Pro
 65 70 75 80
 Arg Cys Cys Gly Pro Glu Arg Gly Cys Arg Ser Ile Pro Gly Pro Arg
 85 90 95
 Thr Arg Ser Ser Arg Thr Ser Ser Thr Thr Val Glu Arg Trp Arg Trp
 100 105 110
 Ser Pro Arg Arg Arg Cys Cys Arg Gly Ser Arg Asp Arg Arg Ala Tyr
 115 120 125

Gly Ser Trp Trp Gly Val Arg Thr Pro Ser Arg Arg Glu Arg Leu Pro
 130 135 140
 Ala Ser Thr Pro Ser Ser Gly Ser Arg Arg Arg Ile Arg Gly Ala Arg
 145 150 155 160
 His Gly Thr Thr Ser Ala Ser Thr Ser Arg Pro Gly Ser Ser Thr Arg
 165 170 175
 Arg Gly Pro Arg Ala Gly Ala Arg Ala Trp Ser Ala Ala Ser Ala Pro
 180 185 190
 Arg Cys Gly Pro Trp Arg Arg Arg Thr Cys Arg Arg Gly Val Trp Gly
 195 200 205
 Arg Arg Thr Gly Cys Cys Gly Arg Cys Pro Cys Ser Thr Pro Thr Arg
 210 215 220
 Thr Arg Cys Ala Cys Ser Gly Trp Trp Pro Trp Ala Arg Ala Arg Thr
 225 230 235 240
 Ser Ser Thr Gly Ala Arg Ala Ser Ser Gly Arg Leu Arg Asn Ser Gly
 245 250 255
 Ala Ala Ser Trp Pro Val Tyr Pro Pro Pro Thr Ala Cys Ser Arg Ala
 260 265 270
 Pro Ser Ala Thr Pro Pro Gly His Arg Pro Ala Cys Asp Cys Ala Ser
 275 280 285
 Pro Gly Ala Ala Pro Cys Pro Pro Gly Leu Arg Ala Asp Val Glu Glu
 290 295 300
 Leu Leu Gly Val Pro Leu Leu Asp Gly Tyr Gly Ser Thr Glu Thr Cys
 305 310 315 320
 Gly Lys Ile Thr Val Glu Arg Leu Gly Gly Ser Arg Glu Gly Gly Cys
 325 330 335

Arg

<210> 126

<211> 246

<212> PRT

<213> Streptomyces verticillus

<220>

<223> ORF41

<400> 126

Met Ile Ala Ala Leu Leu Pro Ser Trp Ala Val Thr Glu His Ala Phe
 1 5 10 15

Thr Asp Ala Pro Asp Asp Pro Val Ser Leu Leu Phe Pro Glu Glu Ala
 20 25 30

Ala His Val Ala Arg Ala Val Pro Lys Arg Leu His Glu Phe Ala Thr
35 40 45

Val Arg Val Cys Ala Arg Ala Ala Leu Gly Arg Leu Gly Leu Pro Pro
50 55 60

Gly Pro Leu Leu Pro Gly Arg Arg Gly Ala Pro Ser Trp Pro Asp Gly
65 70 75 80

Val Val Gly Ser Met Thr His Cys Gln Gly Phe Arg Gly Ala Ala Val
85 90 95

Ala Arg Ala Ala Asp Ala Ala Ser Leu Gly Ile Asp Ala Glu Pro Asn
100 105 110

Gly Pro Leu Pro Asp Gly Val Leu Ala Met Val Ser Leu Pro Ser Glu
115 120 125

Arg Glu Trp Leu Ala Gly Leu Ala Ala Arg Arg Pro Asp Val His Trp
130 135 140

Asp Arg Leu Leu Phe Ser Ala Lys Glu Ser Val Phe Lys Ala Trp Tyr
145 150 155 160

Pro Leu Thr Gly Leu Glu Leu Asp Phe Asp Glu Ala Glu Leu Ala Val
165 170 175

Asp Pro Asp Ala Gly Thr Phe Thr Ala Arg Leu Leu Val Pro Gly Pro
180 185 190

Val Val Gly Gly Arg Arg Leu Asp Gly Phe Glu Gly Arg Trp Ala Ala
195 200 205

Gly Glu Gly Leu Val Val Thr Ala Ile Ala Val Ala Ala Pro Ala Gly
210 215 220

Thr Ala Glu Glu Ser Ala Glu Gly Ala Gly Lys Glu Ala Thr Ala Asp
225 230 235 240

Asp Arg Thr Ala Val Pro
245

<210> 127

<211> 291

<212> DNA

<213> Streptomyces verticillus

<220>

<221> CDS

<222> (19)..(288)

<400> 127

ccggacggcg gcccgctc atg agc gcc ccg cgg ggc gag cgg acc cgg cgc
Met Ser Ala Pro Arg Gly Glu Arg Thr Arg Arg
1 5 10

51

cgc gcg ctc gaa cgc gac atc gcc gcg atc tgg gcc gag acc ctc ggc 99
 Arg Ala Leu Glu Arg Asp Ile Ala Ala Ile Trp Ala Glu Thr Leu Gly
 15 20 25
 agg gac agc gtc ggc ccg cac gag gac ttc gcc gcg ctg ggc ggc aac 147
 Arg Asp Ser Val Gly Pro His Glu Asp Phe Ala Ala Leu Gly Gly Asn
 30 35 40
 tcc atc cac gcc atc aag atc acc aac cgg gtg gag gaa ctc gtc gac 195
 Ser Ile His Ala Ile Lys Ile Thr Asn Arg Val Glu Glu Leu Val Asp
 45 50 55
 gcc gag ctg tcc atc cgc gtc ctg ctc gag acg cgc acc gtg gcc ggc 243
 Ala Glu Leu Ser Ile Arg Val Leu Leu Glu Thr Arg Thr Val Ala Gly
 60 65 70 75
 atg acg gac cac gtc cac gcc acg ctc acg ggg gag cgg gac cgg tga 291
 Met Thr Asp His Val His Ala Thr Leu Thr Gly Glu Arg Asp Arg
 80 85 90

<210> 128
 <211> 90
 <212> PRT
 <213> Streptomyces verticillus

<400> 128
 Met Ser Ala Pro Arg Gly Glu Arg Thr Arg Arg Arg Ala Leu Glu Arg
 1 5 10 15
 Asp Ile Ala Ala Ile Trp Ala Glu Thr Leu Gly Arg Asp Ser Val Gly
 20 25 30
 Pro His Glu Asp Phe Ala Ala Leu Gly Gly Asn Ser Ile His Ala Ile
 35 40 45
 Lys Ile Thr Asn Arg Val Glu Leu Val Asp Ala Glu Leu Ser Ile
 50 55 60
 Arg Val Leu Leu Glu Thr Arg Thr Val Ala Gly Met Thr Asp His Val
 65 70 75 80
 His Ala Thr Leu Thr Gly Glu Arg Asp Arg
 85 90

<210> 129
 <211> 90
 <212> PRT
 <213> Unknown Organism

<220>
 <223> Description of Unknown Organism: Grs-2

<400> 129
 Ile Ser Ile Gly Thr Glu Tyr Val Ala Pro Arg Thr Met Leu Glu Gly
 1 5 10 15

Lys Leu Glu Glu Ile Trp Lys Asp Val Leu Gly Leu Gln Arg Val Gly
 20 25 30
 Ile His Asp Asp Phe Phe Thr Ile Gly Gly His Ser Leu Lys Ala Met
 35 40 45
 Ala Val Ile Ser Gln Val His Lys Glu Cys Gln Thr Glu Val Pro Leu
 50 55 60
 Arg Val Leu Phe Glu Thr Pro Thr Ile Gln Gly Leu Ala Lys Tyr Ile
 65 70 75 80
 Glu Glu Thr Asp Thr Glu Gln Tyr Met Ala
 85 90

<210> 130
 <211> 89
 <212> PRT
 <213> Unknown Organism

<220>
 <223> Description of Unknown Organism: Srfa-3

<400> 130
 Asp Gln Leu Ala Glu Glu Trp Ile Gly Pro Arg Asn Glu Met Glu Glu
 1 5 10 15
 Thr Ile Ala Gln Ile Trp Ser Glu Val Leu Gly Arg Lys Gln Ile Gly
 20 25 30
 Ile His Asp Asp Phe Phe Ala Leu Gly Gly His Ser Leu Lys Ala Met
 35 40 45
 Thr Ala Val Pro His Gln Gln Glu Leu Gly Ile Asp Leu Pro Val Lys
 50 55 60
 Leu Leu Phe Glu Ala Pro Thr Ile Ala Gly Ile Ser Ala Tyr Leu Lys
 65 70 75 80
 Asn Gly Gly Ser Asp Gly Leu Gln Asp
 85

<210> 131
 <211> 90
 <212> PRT
 <213> Unknown Organism

<220>
 <223> Description of Unknown Organism: Vir-S

<400> 131
 Gly Arg Ser Val Glu Gly Arg Gly Val Pro Arg Thr Pro Gln Gln Glu
 1 5 10 15

Ile Leu Ala Ser Leu Phe Ala Glu Val Leu Gly Leu Ser Lys Val Gly
 20 25 30

Ile His Glu Asp Phe Phe Asp Leu Gly Gly His Ser Leu Leu Ala Thr
 35 40 45

Arg Leu Thr Ser Arg Ile Arg Thr Val Leu Gly Ala Glu Ile Ala Val
 50 55 60

Arg Asp Leu Phe Glu Ala Pro Thr Val Glu Ala Leu Ala Glu Thr Leu
 65 70 75 80

Glu Glu Ala Arg Glu Val Arg Pro Ala Leu
 85 90

<210> 132
 <211> 90
 <212> PRT
 <213> Unknown Organism

<220>
 <223> Description of Unknown Organism: Saf-B

<400> 132
 Leu Asp Pro Gly Gln Asp Tyr Leu Ala Pro Arg Asn Glu Leu Glu Ala
 1 5 10 15

Arg Ile Ala Ala Ile Trp Glu Gly Leu Leu Arg Arg Glu Arg Val Gly
 20 25 30

Val His Asp Ser Phe Phe Asp Leu Gly Gly Asn Ser Leu Leu Ala Thr
 35 40 45

Arg Leu Ala Thr Arg Leu Ala Ala Thr Leu Gln Val Gln Ala Gly Val
 50 55 60

Arg Thr Val Phe Glu His Arg Thr Val Ala Ala Gln Ala Ala His Phe
 65 70 75 80

Thr Gln Ala Thr Lys Thr His Gln Ala His
 85 90

<210> 133
 <211> 89
 <212> PRT
 <213> Unknown Organism

<220>
 <223> Description of Unknown Organism: BlmI

<400> 133
 Met Ser Ala Pro Arg Gly Glu Arg Thr Arg Arg Arg Ala Leu Glu Arg
 1 5 10 15

Asp Ile Ala Ala Ile Trp Ala Glu Thr Leu Gly Arg Asp Ser Val Gly
 20 25 30

Pro His Glu Asp Phe Ala Ala Leu Gly Gly Asn Ser Ile His Ala Ile
35 40 45

Lys Ile Thr Asn Arg Val Glu Glu Leu Val Asp Ala Glu Leu Ser Ile
50 55 60

Arg Val Leu Leu Glu Thr Arg Thr Val Ala Gly Met Thr Asp His Val
65 70 75 80

Ala Thr Leu Thr Gly Glu Arg Asp Arg
85